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LUBRIZOL PETROLEUM CHEMICALS CORPORA
DEER PARK, TX 77015



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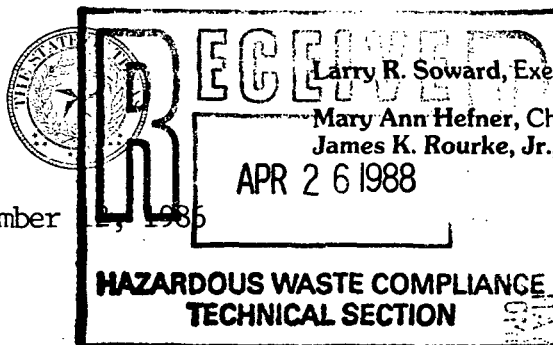


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TEXAS WATER COMMISSION

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Bill

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



November 1, 1986

Mr. Sam Becker, Chief
Hazardous Materials Branch
U. S. Environmental Protection Agency
Region VI - 6H-C
1201 Elm Street
Dallas, Texas 75270

Re: The Lubrizol Corporation - Deer Park Facility
Industrial Solid Waste Registration No. 30324
Transmittal of Draft Hazardous Waste Permit, Compliance Plan, and
revised Preliminary Assessment

Dear Mr. Becker:

In accordance with the Memorandum of Agreement between the State of Texas and the U. S. Environmental Protection Agency, transmitted herewith is the draft hazardous waste permit, Compliance Plan, and revised Preliminary Assessment for The Lubrizol Corporation. Provisions V.AA., V.BB., V.DD., and Section VI. of the draft permit will implement the applicable requirements of the Hazardous and Solid Waste Amendments of 1984 (HSWA).

Questions or comments should be directed to the staff technician indicated below within thirty days from the date of this letter.

<u>Applicant</u>	<u>Technician</u>	<u>Permit No.</u>	<u>EPA I.D. No.</u>
The Lubrizol Corporation	Wayne R. Harry Carol Boucher	HW-50077 CP-50077	TXD 041067638

We have received your comments concerning the RCRA Preliminary Assessment (PA) for The Lubrizol Corporation submitted by your letter dated May 7, 1986. A Visual Site Inspection (VSI) was performed June 23, 1986 at the facility to provide additional information concerning the units addressed in the PA. As part of the PA/SI process, each active and inactive waste management unit at the facility has been evaluated to determine whether a release to the environment has occurred. A Remedial Investigation (RI) is recommended for facility units for which a release of hazardous waste or hazardous constituents has been documented, for facility units for which there is a high potential for a release, and for facility units for which insufficient information is available to make such determinations. No further action is recommended when sufficient information exists which indicates that no release to the environment has occurred or when an appropriate remedial investigation or corrective action is already in progress. Such actions will be formalized in the draft permit or the draft Compliance Plan.

Tank T-23X [Facility No. 13 on the TWC Notice of Registration (NOR)] is an above-grade, carbon steel tank in good condition secured on a concrete foundation. No leaks or spills were visible. Tank T-23X has been incorrectly described as containing Class I organic liquid and water. The tank contains sodium aluminate solution which is listed as a Class IH waste in the NOR. Lubrizol is currently using this sodium aluminate solution as a common ionic flocculent in water treatment. Lubrizol has requested that the TWC determine whether this secondary material is being used as an acceptable substitute for a commercial product and is excluded from the definition of a solid waste. The TWC is currently preparing a response and will request additional information if necessary for any future RCRA permitting actions. No releases were observed from this unit and none are expected in the future provided the unit is maintained and operated properly. In the context of the PA/SI, no further action is recommended.

Tank J-52 is an above-grade, insulated, carbon steel tank in good condition on a concrete foundation. No leaks or spills were visible. The tank contains spent sulfuric acid. Lubrizol claims that this spent sulfuric acid is used to produce virgin sulfuric acid and is specifically excluded from the definition of solid waste pursuant to 40 CFR 261.4(a)(7). Lubrizol has requested that the TWC determine whether this material is a solid waste. The TWC is currently evaluating this request and will prepare an appropriate response. No releases were observed from this unit and none are expected in the future provided the unit is maintained and operated properly. In the context of the PA/SI, no further action is recommended.

Tank WO-1 (Facility No. 04 on the TWC NOR) is an above-grade carbon steel tank in good condition which is secured on a concrete pad. The tank contains organic liquid and water which is presently listed as Class IH waste due to ignitability. A small amount of staining was noted on the surrounding gravel. During the site investigation, Lubrizol stated that the waste classification for this tank is incorrect and that the tank has never contained liquids with a flash point below 140°F. Lubrizol is currently in the process of changing the waste classification to Class I non-hazardous organic liquid and water. A remedial investigation is recommended to remove the stained gravel and any contaminated soil surrounding the tank.

Tanks CA-1 and J-42 (Facility Nos. 14 and 15 on the TWC NOR) are both above-grade, fiberglass-reinforced plastic tanks in good condition which are secured on concrete foundations and surrounded by 3.0-foot and 4.5-foot high containment walls, respectively. The tanks contain sodium sulfite scrubber water solution which is hazardous due to the characteristic of corrosivity. Liquid wastes were observed leaking from a pump attached to Tank CA-1 and draining into the facility

process wastewater treatment system. There were no leaks or spills noted around Tank J-42. Lubrizol has submitted complete technical information for these tanks as part of their Part B permit application for these tanks. This technical information was included as Attachments VIII and IX of the PA. In the context of the PA/SI, no further action is recommended. The TWC will continue to perform RCRA permitting actions for these tanks. Proper waste management procedures for spills and leakage from ancillary equipment shall be addressed in the permit.

Tanks C-5, C-6, C-22, M-26, M-28, M-29, M-31, L-6, and K-1 are above-grade carbon steel tanks in good condition which are secured on concrete foundations and surrounded by three-foot high containment walls. No spills or leaks were visible. These tanks contain mixed alcohols and water. Lubrizol considers this mixture a secondary material and has requested that the TWC determine whether this material is a solid waste. The TWC is preparing a response and will request additional information as necessary for future permitting actions. In the context of the PA/SI, no further action is recommended.

Site Investigations for the Bulk Storage Areas (Facility Nos. 22, 23, and 24 on the TWC NOR) were suggested in the original preliminary assessment due to a lack of detailed information about these units. During the recent VSI, the areas were observed to be concrete slabs which contained several 30-cu.yd. steel roll-off bins which were sloped to drains leading to the facility process wastewater treatment system. The bins contain Class II diatomaceous earth filter media, biological and domestic sewer sludge, sulfur waste scrap, and small amounts of Appendix VIII constituents as detailed in the PA. No releases were observed for these units and none are expected in the future provided that the areas are maintained and operated properly. No further action appears to be necessary and has been so stated in the revised preliminary assessment.

Site Investigations for the (new) Lift Station No. 1 and Tanks T1A and T1B were suggested in the original preliminary assessment due to a lack of detailed information about these units. The recent VSI has revealed that Lift Station No. 1 is a newly constructed unit which consists of Tanks T1A and T1B situated inside an open-top below-grade concrete vault. The tanks are API Separators which contain process wastewaters with small amounts of Appendix VIII constituents as detailed in the preliminary assessment. No releases were observed for this newly constructed facility and none are expected in the future provided the unit is maintained and operated properly. No further action appears to be necessary and has been so stated in the revised preliminary assessment.

Site Investigations for Tanks E1, E2, and E4 were suggested in the original preliminary assessment due to a lack of detailed information about these units. The recent visual site inspection has revealed that Tanks E1, E2, and E4 are above-grade carbon steel tanks in good condition which are secured on concrete pads. These tanks contain process wastewater with Appendix VIII constituents as detailed in the preliminary assessment. No releases were observed from these units and none are expected provided the unit is maintained and operated properly. No further action is recommended for these units.

Remedial investigations to include subsoil investigations such as soil borings and ground-water monitoring where appropriate are suggested for all other units for which site investigations were recommended in the original preliminary assessment.

Lubrizol submitted to the TWC by letter dated June 12, 1986, a list of additional wastes and waste management units at the Deer Park Plant site. The following units are now included in the revised preliminary assessment:

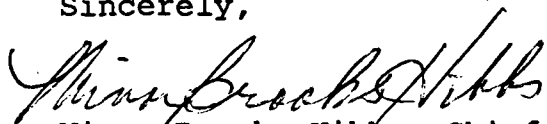
<u>NOR</u>	<u>Waste Management Unit</u>	<u>Waste Class</u>	<u>Status</u>
28	Tank WO-2	I	Active
29	Tank RA-10	II	Active
30	Tank WO-8	I	Active
31	Tank FO-21	I	Active
32	Tank WO-9	I	Active
33	Tank WO-10	I	Active
34	Tank BB-3	I	Active
35	Tank T/C-1	I	Active
36	Tank P-25	I	Active
37	Tank LAB-A [formerly below- grade storage tank (steel)]	IH	Active
38	Tank LAB-B (below-grade)	IH	Active
39	Bulk Storage Area	I	Active
40	Tank 156 W/O	I	Active
41	Drum Storage Area	I	Active

Additional information has also been submitted for Facility Nos. 2, 3, 5, 13, 16, 17, 21-24, 26, and 27 on the TWC NOR. This information has been considered and included in the revised preliminary assessment as appropriate.

Mr. Sam Becker
Page 5
November 12, 1986

Should you have any further questions or comments, please contact
Wayne R. Harry of Facility Unit III at AC512/463-8174.

Sincerely,

A handwritten signature in cursive script, reading "Minor Brooks Hibbs".

Minor Brooks Hibbs, Chief
Permits Section
Hazardous and Solid Waste Division

WRH:lab

Enclosure

cc: TWC Southeast Region Office - Deer Park

PRELIMINARY ASSESSMENT FACILITY CHECKLIST

Facility: The Lubrizol Corporation
EPA ID #: TXD 041067638
Reg. No.: 30324
HAZSIT #: TX 00876

Reviewer: Wayne R. Harry
Section: TWC Permits
Date:

A. Waste Management Units:

1. RCRA Regulated Units
See Attachment I
2. Solid Waste Management Units
See Attachment II

B. Reviewed Documents:

1. RCRA: Part A x Part B x Permit
2. CERCLA: *Notification none date
Mitre Model date HRS
Remedial Investigation date
Feasibility Study date
Record of Decision date

*Tentative Decision 4/12/83

Site Inspection 2/10/84 Result: "Low Hazard Assessment"

3. Inspection Reports:

Site Investigations: URM, November 8, 1984
TWC, March 21, 1986
TWC, September 20, 1985
TWC, October 16, 1984
TWC, July 25, 1984

4. Enforcement Actions:

TWC, January 6, 1986 - Agreed Final Judgement, State of Texas vs.
The Lubrizol Corporation, Cause No. 85-57130.

5. Exposure Information: Hazardous Waste Permit Application
Addendum for TACB (Attachment V)

6. Other Information:

- a. Notice of Registration (N.O.R.) from TWC
- b. Visual Site Inspection was conducted on June 23, 1986 at the
facility to provide additional information concerning the
waste management units.

C. Summary:

The Lubrizol Corporation operates an interim status hazardous waste management facility associated with their chemical production plant in Deer Park, Texas. The hazardous waste management units consist of twenty tanks, one container storage area, and two surface impoundments.

Operation of the two surface impoundments has resulted in discharge of low concentrations of several Appendix VIII materials to shallow area ground water. Lubrizol has submitted a Ground-Water Quality Assessment Plan for the two impoundments to the Texas Water Commission. Lubrizol has also submitted a Ground-water Compliance Plan pursuant to the Agreed Final Judgement between the State of Texas vs. The Lubrizol Corporation, Cause No. 85-57130. The closure plans for the impoundments have been approved by the TWC.

A Visual Site Investigation (VSI) was conducted on June 23, 1986 at the facility to provide additional information concerning the waste management units.

A Remedial Investigation (RI) is recommended for the following facility units for which a release of hazardous waste or hazardous constituents has been documented, for which there is a high potential of a release, or for which insufficient information is available to make such determinations:

<u>N.O.R.</u>	<u>Waste Management Unit</u>	<u>Status</u>
1	Concrete Storage Tank (below-grade)	Inactive
04	Tank WO-1	Active
38	Tank LAB-B (below-grade)	Active
	Lift Station No. 2	Active
	Surface Impoundment (Aeration Lagoon)	Active
	Surface Impoundment	Inactive
	Waste Piles	Inactive
	Tank T3X (below-grade)	Active
	Tank T4X (below-grade)	Active
	Tank T5A (below-grade)	Active
	Tank T5B (below-grade)	Active
	Tank T7A (below-grade)	Active
	Tank T7B (below-grade)	Active
	Tank T-22X (below-grade)	Active

D. Recommended Actions:

1. No Further Action	_____
2. Site Investigation	_____
3. Remedial Investigation	<u> x </u>
4. Corrective Action	_____
5. Referral for Health Assessment	_____

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 01 SWMU Inactive

Type: Below-grade concrete storage tank

Reinforced concrete box with a capacity of 815 yd³; currently being closed.

II. Evidence of Release:

The company has sampled the sub-surface soils as part of closure for this unit. Significant concentrations of barium, chromium, and TOC were detected. No background values were supplied.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Filter cake and miscellaneous Class II waste containing small amounts of Appendix VIII constituents, phenol, M.E.K., maleic anhydride, barium compounds, toluene, CS₂, chromium compounds.

Quantity: 815 yd³

Fate and Toxicity: See Attachment IV.

V. Target Populations of Concern:

See Attachment III.

VI. Documents Reviewed:

See Attachment III. Also, correspondence dated 8/1/85, 8/29/85, 10/3/85 and 2/4/86.

VII. Site Description:

Unit is located in the NW corner of the facility. It consists of a below-grade open-top reinforced concrete tank.

VIII. Summary:

The unit is presently inactive and is undergoing closure in accordance with a TWC-approved (12/13/85) closure plan. Available information suggests a possible release to the sub-surface soil may have occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 02 SWMU Active

Type: Bulk Storage Area (5) 40 cu. yd. steel bins

II. Evidence of Release:

No evidence of release

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II Plant refuse, general miscellaneous waste

Quantity: 120 cu. yds. total

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III.

VII. Site Description:

These units are located in the northwest portion of the plant. Wastes are routinely removed for off-site disposal.

VIII. Summary:

Available information does not indicate past releases from these units. Future releases are not anticipated provided the units are maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 03 SWMU Active

Type: Tank (above-grade) Lubrizol ID No. = C-61

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, clarifier sludge with trace organics

Quantity: 4,849 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III.

VI. Documents Reviewed:

See Attachment III.

VII. Site Description:

Located in the process area of the plant.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 04 RCRA Active

Type: Tank (above-grade) Lubrizol ID NO. = WO - 1

II. Evidence of Release:

During a June 23, 1986 site investigation, a small amount of staining was noted on the gravel surrounding the tank.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, Waste Code 915490; Organic liquid & water; Appendix VIII
constituent - phenol

Quantity: 6,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the central portion of the plant site.

VIII. Summary:

Stains were observed around this unit.

IX. Recommended Actions:

Remedial Investigation. The stained gravel should be removed along with any contaminated soil. The tank should be tested to determine whether staining is due to tank leakage or careless loading and unloading practices. Soil samples should be analyzed to determine the extent of contamination. Specific actions will be formalized in the draft permit for this facility.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 05 SWMU Active

Type: Storage Tank - Above-grade fiberglass tank
Lubrizol ID No. = WO - 3

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water containing small amounts of App.
VIII const. - phenol
Quantity: 13,709 gal. max. cap.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the northwest portion of the plant site.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 06 SWMU Active

Type: Tank (above-grade) Lubrizol ID No. = WO - 5
Stainless steel with a fiberglass top

II. Evidence of Release:

No evidence.

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490, Organic liquid and water with small
amounts of Phenol

Quantity: 8,408 Gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design
specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good
functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 07 RCRA Active

Type: Tank (above-grade) Lubrizol ID No. = WO - 6

II. Evidence of Release:

See Permit Application Addendum for TACB (Attachment V)

III. Pollutant Dispersal Pathways:

See Attachment III.

Air: See also Attachment V

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; organic liquid and water with App. VIII
const. - phenol

Quantity: 8,400 gal. capacity

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III.

VI. Documents Reviewed:

See Attachment III, V

VII. Site Description:

Unit is located on the northwest portion of the plant² site. See
Attachments VI and VII.

VIII. Summary

Tank WO-6 is included as part of the draft H&SW permit for this facility.
Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good
functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 08 SWMU Active

Type: Tank (above-grade) Lubrizol ID No. = T-19P

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

Air: See also Attachment V

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 10,000 gal. capacity

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 09 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-19W

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 4,500 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 10 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-19X

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 10,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 11 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-19Y

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

2

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 12,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 12 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-20X

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 16,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 13 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-23X

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IH, Waste Code #900880; Sodium aluminate solution

Quantity: 12,000 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985 and correspondence dated January 7, 1986. See Attachment III.

VII. Site Description:

Unit is located on the northwest portion of the plant site.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 14 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = CA-1

II. Evidence of Release:

Leaking material from an ancillary pump was observed draining into the facility process wastewater treatment system during the June 23, 1986 Site Investigation. The material was effectively contained by the secondary containment system described below. No release from the containment had occurred.

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IH, Waste Code #908260; scrubber water, sodium sulfite solution

Quantity: 18,000 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the north central portion of the plant site. Tank CA-1 is a fiberglass-reinforced plastic tank in good condition secured on a concrete slab surrounded by 4.5-foot high containment walls. See Attachments VI, VIII, and XII.

VIII. Summary

Unit will be part of a draft H&SW permit. Proper waste management procedures for spills and leakage from ancillary equipment shall be addressed in the permit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 15 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = J-42

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IH, Waste Code #908260; scrubber water, sodium sulfite solution

Quantity: 10,000 gal.

Fate & Toxicity: No data

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

See Attachments VI, IX, and XII.

VIII. Summary:

Unit will be part of a draft H&SW permit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 16 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = H-6

II. Evidence of Release:

Spills were noted on tank and the surrounding concrete slab. However, the tank rests on a concrete slab surrounded by three-foot secondary containment walls. Releases to the ground water and surface water are effectively prevented by the containment. Release to the air is minimized if spilled material is removed promptly.

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII const. - phenol

Quantity: 12,126 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the central portion of the plant site. See Attachment XII. No design specifications are available.

VIII. Summary

Lubrizol has been instructed to remove any spilled material expeditiously and to maintain a clean containment area.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 17 RCRA Inactive

Type: Storage Tank (above-grade tank car shell)
Currently undergoing closure

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IH, Waste Code #915490; Organic liquid and water, process
wastewaters

Quantity: 5,500 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. The unit is a horizontal, carbon steel tank. No
design specifications are available.

VIII. Summary:

Unit #17 is inactive and is currently undergoing closure in accordance with
a TWC-approved (5/27/86) closure plan. Available information does not
indicate past releases from this unit. Future releases are not anticipated
provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 18 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = B-32

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

Air: See also Attachment V

IV. Waste Characteristics:

Type: Class IH, Waste Codes 913860, 910590, 915530; non-halogenated solvents, misc. organic lab waste, crankcase oil; App. VIII. Const.
- phenol, MEK, toluene

Quantity: 15,106 gal. cap.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, V

VII. Site Description:

Located in process area. See Attachments VI, X, and XI

VIII. Summary:

Unit will be part of a draft H&SW permit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 19 SWMU Active

Type: Bulk Storage Area (enclosed) (3) 30 cu. yd. steel bins

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, Waste Code #249950, biological sludge, domestic sewer sludge containing small amounts of barium and chromium

Quantity: 90 cu. yd. total

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary:

Available information does not indicate past releases from these units. Future releases are not anticipated provided the units are maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 20 RCRA Active

Type: Drum Storage Area (less than 90 days)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, Waste Code #981690, 914990, 914250, 911080, 913640,
910030, 970490, carbon disulfide, N-butyl alcohol, isobutyl alcohol,
methanol, phenol xylene/xylol, contaminated soil

Quantity: Not available

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good
functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 21 RCRA, Active

Type: Container storage (7) roll-off boxes (less than 90 days)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, diatomaceous earth filter media with barium, oil, plastic, and dirt, biological sludge from domestic sewer system, and sulfur waste; with small amounts of App. VIII constituents -- phenol, MEK, maleic anhydride, barium and compounds, chromium and compounds, CS₂, toluene. Class II, Waste Code #270640, 249950, 270240

Quantity: 210 cu. yd. max. cap.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary:

Available information does not indicate past releases from these units. Future releases are not anticipated provided the units are maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 22 SWMU Active

Type: Bulk storage area with 2 30-cu.-yd. steel bins I.D. #s WC2A, WC2B

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, Waste Code #270640, 249950, 270240; diatomaceous earth filter media with oil, plastic, and dirt, biological sludge, domestic sewer sludge, sulfur waste scrap, with small amounts of Appendix VIII constituents -- phenol, methyl ethyl ketone (MEK), maleic anhydride, barium and compounds, chromium and compounds, carbon disulfide, toluene

Quantity: 2 30-cu.-yd. bins

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary:

The area is a concrete slab which is sloped to drain into the process wastewater treatment system. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 23 SWMU Active

Type: Bulk storage area with 2 steel roll-off bins, ID #s WC3A, WC3B

II. Evidence of Release:

*

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area.

VIII. Summary:

The area is a concrete slab which is sloped to drain into the process wastewater treatment system. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

* See N.O.R. Facility #22 Bulk Storage Area

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 24 SWMU Active

Type: Bulk storage area with 3 steel roll-off bins, ID #s WC1A, WC1B, WC1C

II. Evidence of Release:

*

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area.

VIII. Summary:

The area is a concrete slab which is sloped to drain into the process wastewater treatment system. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

* See N.O.R. Facility #22

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 25 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = RA-3

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, Waste Code #115490, Organic liquid and water with Appendix VIII constituent -- phenol

Quantity: 16,521 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 26 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = WO-4

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, Waste Code #115490, Organic liquid and water with Appendix VIII constituent -- phenol

Quantity: 10,066 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located at the east property water treatment system. See Attachment XII. The unit is a carbon steel tank situated on a concrete slab. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 27 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = H-73

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, Waste Code #115940, Organic liquid and water with Appendix VIII constituent -- phenol

Quantity: 10,000

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 28 SWMU Active

Type: Above-grade fiberglass storage tank; ID # WO-2

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 2,110 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 29 SWMU Active

Type: Above-grade storage tank; ID # RA-10

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, clarifier sludge containing trace organics

Quantity: 1,000 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 30 SWMU Active

Type: Above-grade storage tank; ID # WO-8

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 1,113 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

The unit is a carbon steel tank on a concrete slab. See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 31 SWMU Active

Type: Above-grade storage tank; ID # FO-21

II. Evidence of Release:

Spills were noted on the tank and surrounding concrete slab. The unit is located on a concrete slab and is surrounded by curbing. Releases to the ground water and surface water are effectively prevented by the containment. Release to the air is minimized if spilled material is removed promptly.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 2,110 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/18/86.

VII. Site Description:

The unit is a carbon steel tank on a concrete slab surrounded by curbing.
See Attachment XII.

VIII. Summary:

Lubrizol has been instructed to remove any spilled material expeditiously and to maintain a clean containment area.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 32 SWMU Active

Type: Above-grade storage tank; ID # WO-9

II. Evidence of Release:

No evidence.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 1,113 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/18/86.

VII. Site Description:

The unit is a carbon steel tank on a concrete slab. See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 33 SWMU Active

Type: Above-grade storage tank; ID # WO-10

II. Evidence of Release:

No evidence.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 1,064 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/18/86.

VII. Site Description:

The unit is a carbon steel tank on a concrete slab. See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 34 SWMU Active

Type: Above-grade steel storage tank; ID # BB-3

II. Evidence of Release:

No evidence.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 2,484 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/18/86.

VII. Site Description:

Located on a concrete slab. See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 35 SWMU Active

Type: Above-grade steel storage tank; ID # T/C-1

II. Evidence of Release:

No evidence.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 10,567 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

The unit is a tank car shell located above a concrete slab. See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 36 SWMU Active

Type: Above-grade steel storage tank; ID # P-25

II. Evidence of Release:

Spills were noted on the tank and the surrounding concrete slab. The unit is located on a concrete slab and is surrounded by curbing. Releases to the ground water and surface water are effectively prevented by the containment. Release to the air is minimized if spilled material is removed promptly.

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 2,110 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

See Attachment XII.

VIII. Summary:

Lubrizol has been instructed to remove any spilled material expeditiously and to maintain a clean containment area.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 37 RCRA Active

Type: Above-grade storage tank; ID # LAB-A. Less than 90 days.

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, laboratory waste miscellaneous

Quantity: 345 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

Located in the central portion of the plant. See Attachment XII.

VIII. Summary:

Available information does not indicate past releases^o from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 38 RCRA Inactive

Type: Below-grade steel storage tank, I.D. #LAB-B. Less than 90-day storage.

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, lab waste miscellaneous organic liquid

Quantity: 568 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also correspondence dated 7/23/84, 9/5/84, 2/1/85, and 12/13/85.

VII. Site Description:

Steel tank, 4'0" diameter, for the storage of lab solvents. No design specifications are available. See Attachment XII. 6

VIII. Summary:

The closure plan has been approved for this unit. Available information does not indicate past releases from this unit. Future soil samples, as part of the approved closure plan, will determine whether a release has occurred to the sub-soil.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions will be investigated during closure using soil borings to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 39 SWMU active

Type: Enclosed bulk storage area I.D. - Asbestos storage bin

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, asbestos insulation

Quantity: 93 cu. yd. steel container

Fate & Toxicity: See Attachment IV.

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 40 SWMU active

Type: Above-grade storage tank, ID # 156 W/O

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, organic liquid and water

Quantity: 250 gal.

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III.

VII. Site Description:

See Attachment XII.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 41 SWMU active

Type: Drum Storage Area

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, spent catalyst resin

Quantity: Unknown

Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, also Lubrizol correspondence dated 6/12/86.

VII. Site Description:

Located in the process portion of the facility.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ^{HJ}None RCRA Inactive

Type: Lift Station No. 1 (Inactive)
Wastewater treatment lift station

II. Evidence of Release:

Currently undergoing ground-water assessment and closure

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene

Quantity: 45,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III and letter to TWC from Lubrizol dated November 15, 1985 re: Ground-water Assessment Plan for No. 1 Lift Station; also Part B revisions, Section VIII (Sept. 17, 1985)

VII. Site Description:

The No. 1 Lift Station (inactive) is located on the northwest corner of the Lubrizol Deer Park facility. This unit consists of an earthen bottom and steel sides.

VIII. Summary:

The No. 1 Lift Station is currently inactive and is undergoing closure in accordance with a TWC-approved (8/26/86) closure plan. Ground-water assessment is being undertaken and a remedial investigation will be performed in accordance with TWC Compliance Plan No. CP-50077.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁴³None RCRA Inactive

Type: Surface Impoundment
Wastewater Treatment Equalization Lagoon

II. Evidence of Release:

Sampling data from downgradient wells indicate levels of TOC and phenols above background.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene
Quantity: 1,390,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Letter to TDWR (TWC) from Lubrizol dated December 28, 1984 re: Closure of Equalization Basin

VII. Site Description:

The equalization basin is located on the southwest portion of the Lubrizol-Deer Park facility. No detailed construction plans are available. The unit is approximately 125' x 175' across.

VIII. Summary:

The equalization basin is presently inactive and is to be closed. Concentrations of TOC, TOH, and Phenol, higher than background, have been found in monitoring wells downgradient from the equalization basin.

A ground-water assessment plan has been submitted and corrective action will be taken in accordance with TWC Compliance Plan No. CP-50077.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁴⁴None RCRA Active

Type: Lean Oleum Storage Tank (above-grade)
Lubrizol ID # J-52

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Lean Oleum (Spent sulfuric acid)
Quantity: 10,239 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

See Attachment VI for location. The unit is an insulated carbon steel tank in good condition.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁴⁵None SWMU Active

Type: New Lift Station No. 1 (below-grade)
Wastewater Treatment Lift Station

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene

Quantity: 84,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. The unit is an open-top, below-grade concrete vault which contains Tanks T1A and T1B.

VIII. Summary:

This is a newly constructed unit which acts as a containment structure for the two under-ground tanks T1A and T1B. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁴⁶None SWMU Active

Type: Lift Station No. 2
Wastewater Treatment Lift Station (below-grade)

II. Evidence of Release:

The June 23, 1986 SI revealed that Lift Station No. 2 had experienced a massive failure. Apparently the unit had been overfilled and the weight of the overflow caused the secondary containment floor to fail and break away. A six-foot diameter hole was observed to contain black oil and water.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene
Quantity: 42,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. See Attachment XII. The unit is a fiberglass tank embedded in a concrete slab surrounded by three-foot containment walls. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine the extent of the release.

VIII. Summary:

A release has occurred at the unit. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine the extent of the release.

IX. Recommended Actions:

Remedial investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁴⁷None SWMU Active

Type: Wastewater Treatment API Separator
Lubrizol ID # Tank T-1A

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene
Quantity: 21,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. This unit is a fiberglass tank located in the below-grade vault, (new) Lift Station No. 1. No design specifications are available.

VIII. Summary:

This is a newly constructed unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None ⁴⁸ SWMU Active

Type: Wastewater Treatment API Separator
Lubrizol ID # Tank T-1B

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area. This unit is a fiberglass tank located in the below-grade vault, (new) Lift Station No. 1. No design specifications are available.

VIII. Summary:

This is a newly constructed unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

* See Tank T-1A

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁴⁹None SWMU Active

Type: Wastewater Treatment Coarse Neutralization
Lubrizol ID # Tank T3X (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene

Quantity: 7,500 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None⁵⁰ SWMU Active

Type: Wastewater Treatment Fine Neutralization
Lubrizol ID # Tank T4X (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases^o from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

*See Tank T3X (subsurface)

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁵¹None SWMU Active

Type: Wastewater Treatment Flocculation
Lubrizol ID # Tank T22X (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: See Tank T3X (below-grade)
Quantity: 31,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ^{SV}None SWMU Active

Type: Wastewater Treatment Primary Clarification
Lubrizol ID # Tank T5A (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: See Tank T3X (subsurface)
Quantity: 118,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶³None SWMU Active

Type: Wastewater Treatment Primary Clarification
Lubrizol ID # Tank T-5B (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: See Tank T3X (below-grade)
Quantity: 118,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁵⁴None SWMU Active

Type: Surface Impoundment
Wastewater Treatment Aeration Lagoon

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone (MEK), barium compounds, chromium compounds, toluene
Quantity: 4,800,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III; also letter from Lubrizol to TWC dated 11/14/85.

VII. Site Description:

Located in wastewater treatment area. Unit consists of concrete sides and a clay bottom.

VIII. Summary:

Available information does not indicate past releases from this unit. As stated in the 11/14/85 letter sent to TWC, a ground-water sample was taken from the monitor well AE-2 located downgradient of the surface impoundment. The analysis indicated very low concentrations of a few Appendix VIII constituents. TOC was not measured.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁵⁵None SWMU Active

Type: Wastewater Treatment Final Clarification
Lubrizol ID #Tank T7A (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters with low concentrations of chromium compounds,
barium compounds, toluene

Quantity: 176,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are
available.

VIII. Summary:

Available information does not indicate past releases from this unit.
However, this information does not indicate whether site-specific
sub-surface monitoring has been performed to determine whether a release
has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using
soil borings and ground-water monitoring to determine whether a release has
occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ^{SL}None SWMU Active

Type: Wastewater Treatment Final Clarification
Lubrizol ID #Tank T7B (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters with low concentrations of chromium compounds
and barium compounds.

Quantity: 176,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are
available.

VIII. Summary:

Available information does not indicate past releases from this unit.
However, this information does not indicate whether site-specific
sub-surface monitoring has been performed to determine whether a release
has occurred.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using
soil borings and ground-water monitoring to determine whether a release has
occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁵⁷None SWMU Active

Type: Above-grade storage Tank for Stormwater surge.
Lubrizol ID #Tank E1

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wastewaters containing low concentrations of phenol, MEK, chromium compounds, barium compounds, toluene.

Quantity: 110,160 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. The unit is a carbon steel tank in good condition. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁵⁶None SWMU Active

Type: Above-grade Storage Tank for Stormwater surge.
Lubrizol ID #Tank E2

II. Evidence of Release:

0 No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

See Tank E1

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. The unit is a carbon steel tank in good condition. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁵⁵None SWMU Active

Type: Wastewater Treatment Tank for Stormwater surge.
Lubrizol ID #Tank E4

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

See Tank E1

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. The unit is a carbon steel tank in good condition. No design specifications are available.

VIII. Summary:

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁰None SWMU Inactive

Type: Surface Impoundment - Part of Plant's Original Wastewater Treatment System

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wastewaters with low concentrations of barium compounds, chromium compounds, phenol, methyl ethyl ketone, toluene.

Quantity: 1,000,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Northwest portion of the plant.

VIII. Summary:

This surface impoundment is a pre-RCRA unit. It is reported as being inactive since 1970. Available information is inadequate to determine the type of waste contained in the unit and if the unit has been properly closed.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Inactive

Type: Waste Piles

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, Waste Code #270640 Misc. Class II wastes which contain Appendix VIII constituents -- Phenol, methyl ethyl ketone, toluene, maleic anhydride, barium compounds, carbon disulfide

Quantity: 1,000 cu. yd.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in northwest portion of the plant.

VIII. Summary:

These waste piles are pre-RCRA and are reported as being inactive since 1965. Available information is inadequate to determine the type of waste contained in the unit and if the unit has been properly closed.

IX. Recommended Actions:

Remedial investigation. Subsurface conditions should be investigated using soil borings and ground-water monitoring to determine whether a release has occurred.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None [✓] RCRA Active

Type: Short-term steel tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-5

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 979 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶³None RCRA Active

Type: Short-term steel tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-6

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 979 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁴None RCRA Active

Type: Short-term steel tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-22

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 2064 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁵None RCRA Active

Type: Short-term steel tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-26

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 3075 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁶ None RCRA Active

Type: Steel storage tank for wet heavy alcohol (above-grade)
Lubrizol ID # Tank M-26

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 26,328 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁷None RCRA Active

Type: Steel storage tank for wet heavy alcohol (above-grade)
Lubrizol ID # Tank M-28

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 26,328 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁸None RCRA Active

Type: Long-term steel storage tank for wet heavy alcohols (above-grade)
Lubrizol ID # Tank M-29

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 88,128 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁶⁹None RCRA Active

Type: Long-term storage tank for wet heavy alcohol (above-grade_
Lubrizol ID # Tank M-31

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 88,128 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁷⁰None RCRA Active

Type: Short-term steel storage tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank L-6

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 2890 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: ⁷¹None RCRA Active

Type: Short-term steel storage tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank K-1

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 5871 gal.
Fate & Toxicity: Not available

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. The unit is located on a concrete slab. No design specifications are available.

VIII. Summary:

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

Attachment I

<u>N.O.R.</u>	<u>RCRA Regulated Units</u>	<u>Status</u>
04	Tank WO-1	Active
07	Tank WO-6	Active
14	Tank CA-1	Active
15	Tank J-42	Active
13	Tank T-23X	Active
17	Tank Car Shell	Inactive
18	Tank B-32	Active
*20	Drum Storage Area	Active
21	Container Storage	Active
*37	Tank LAB-A	Active
✓*38	Tank LAB-B (below-grade)	Active
	Lift Station No. 1	Inactive
	Equalization Lagoon	Inactive
	Tank J-52	Active
	Tank C-5	Active
	Tank C-6	Active
	Tank C-22	Active
	Tank C-26	Active
	Tank M-26	Active
	Tank M-28	Active
	Tank M-29	Active
	Tank M-31	Active
	Tank L-6	Active
	Tank K-1	Active

*Less than 90-day storage

Attachment II

<u>N.O.R.</u>	<u>SWMU</u>	<u>Status</u>	<u>N.O.R.</u>	<u>SWMU</u>	<u>Status</u>
✓ 01	Below-grade Storage Tank (concrete box)	Inactive	34	Tank BB-3	Active
02	Bulk Storage Area trash bins	Active	35	Tank T/C-1	Active
03	Tank C-61	Active	36	Tank P-25	Active
05	Tank WO-3	Active	39	Bulk Storage Area	Active
06	Tank WO-5	Active	40	Tank 156 W/O	Active
08	Tank T-19P	Active	41	Drum Storage Area	Active
09	Tank T-19W	Active		(New) Lift Station #1	Active
10	Tank T-19X	Active		Lift Station #2 (below-grade)	Active
11	Tank T-19Y	Active		Tank T-1A	Active
12	Tank T-20X	Active		Tank T-1B	Active
16	Tank H-6	Active		Below-grade Tank T-3X	Active
19	Bulk Storage Area	Active		Below-grade Tank T-4X	Active
22	Bulk Storage Area	Active		Below-grade Tank T-22X	Active
23	Bulk Storage Area	Active		Below-grade Tank T-5A	Active
24	Bulk Storage Area	Active		Below-grade Tank T-5B	Active
25	Tank RA-3	Active		Wastewater Aeration Lagoon	Active
26	Tank WO-4	Active		Below-grade Tank T-7A	Active
27	Tank H-73	Active		Below-grade Tank T-7B	Active
28	Tank WO-2	Active		Tank E-1	Active
29	Tank RA-10	Active		Tank E-2	Active
30	Tank WO-8	Active		Tank E-4	Active
31	Tank FO-21	Active		Surface Impoundment	Inactive
32	Tank WO-0	Active		Waste Pile	Inactive
33	Tank WO-10	Active			

Attachment III

III. Pollutant Dispersal Pathways: (ground water, surface water, air)

Ground Water: Releases to the ground water are the primary pollutant dispersal pathway for this facility. The uppermost, usable aquifer in the site area is the Upper Chicot Aquifer located at a depth of approximately 400 feet. Discontinuous sand pockets or "lenses" are present in the uppermost strata at depths of 15 to 30 feet. These sands are typically sandy silts or very fine silty sands. Shallow ground water flow is generally north and west towards Patrick Bayou.

Surface Water: The potential for release to the surface water is low. Adequate site grading and curbing prevent run-on and run-off from this facility. The pathway for a catastrophic release would be into Patrick Bayou, thence into the Houston Ship Channel.

Air: A release to the air would be the secondary pathway of release for this facility. The prevailing wind direction is from the southeast. See Attachment V.

V. Target Populations of Concern: (human, environment)

Located within one mile of the plant are industrial, commercial, residential, and undeveloped areas. Land adjacent to plant boundaries is industrial. The nearest residential areas are approximately one-half mile from the plant. See land use map, Attachment IIIA.

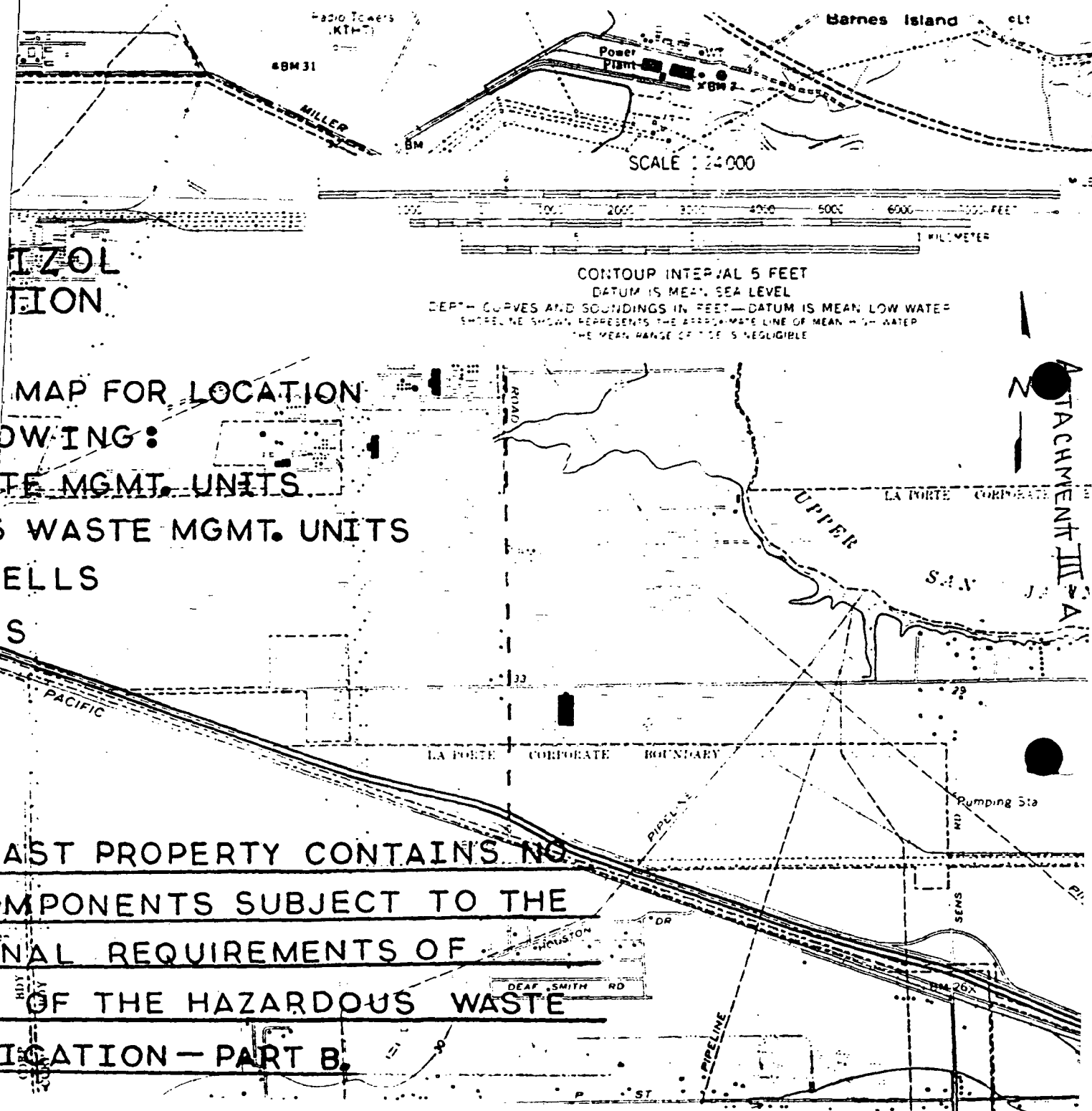
VI. Documents Reviewed:

Notice of Registration (12/19/85), TWC Inspections (9/20/85, 3/21/86), Permit Application Parts A & B, Part B Permit Application, Section VIII Addition (9/17/85), Part A revisions (7/3/85).

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MAP FOR LOCATION
OWING:
TE MGMT. UNITS
WASTE MGMT. UNITS
ELLS
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EAST PROPERTY CONTAINS NO
COMPONENTS SUBJECT TO THE
ONAL REQUIREMENTS OF
I OF THE HAZARDOUS WASTE
LICATION - PART B.



Attachment IV

FATE AND TOXICITY DATA

Appendix VIII Constituent Fate and Toxicity data follows as referenced:

<u>Constituent</u>	<u>Ref (1)</u>	<u>Ref (2)</u>
Barium & Compounds	72	
Butyl Alcohols	109	
Carbon Disulfide	134	I.13.46-1
Chromium & Compounds	176	I.4.6-1
Maleic Anhydride	415	
Methyl Alcohol (Methanol)	434	
Methyl Ethyl Ketone (M.E.K.)	451	
Phenol	531	I.8.1-1
Sodium Aluminate	41	
Sulfuric Acid	619	
Toluene	659	I.9.10-1
Xylenes	714	I.9.18-1

Ref. (1) - Handbook of Toxic and Hazardous Chemicals, Marshall Sittig, 1981.

Ref. (2) - EPA Treatability Manual, Vol. 1. USEPA-600/2-82-001a.

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

AAL-601-86

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158

January 13, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Texas Water Commission
P. O. Box 13087, Capitol Station
Austin, TX 78711

Attention: Mr. Wayne Harry
Hazardous & Solid Waste Permits Section

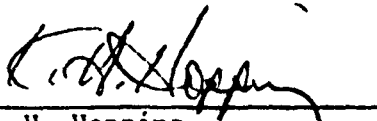
Reference: The Lubrizol Corporation
Hazardous Waste Permit Application No. 10576
Proposed Permit No. HW-5007

Dear Mr. Harry

The attached Hazardous Waste Permit Application Addendum is for Texas Air Control Board review. Please note that information is submitted for only two of the four tanks being permitted, B-32 and WO-6. Information for the other two tanks, J-42 and CA-1 is not included because these tanks produce no air contaminants other than water vapor. Questions concerning this Addendum should be directed to Andrew Lundgren, Environmental Engineer, 713/479-2851, extension 542.

Yours truly,

THE LUBRIZOL CORPORATION


K. H. Hopping
General Manager/Houston Plants

AAL:ms
0739C

Attachments

THE LUBRIZOL CORPORATION

DEER PARK PLANT

HAZARDOUS WASTE PERMIT APPLICATION ADDENDUM

FOR TEXAS AIR CONTROL BOARD

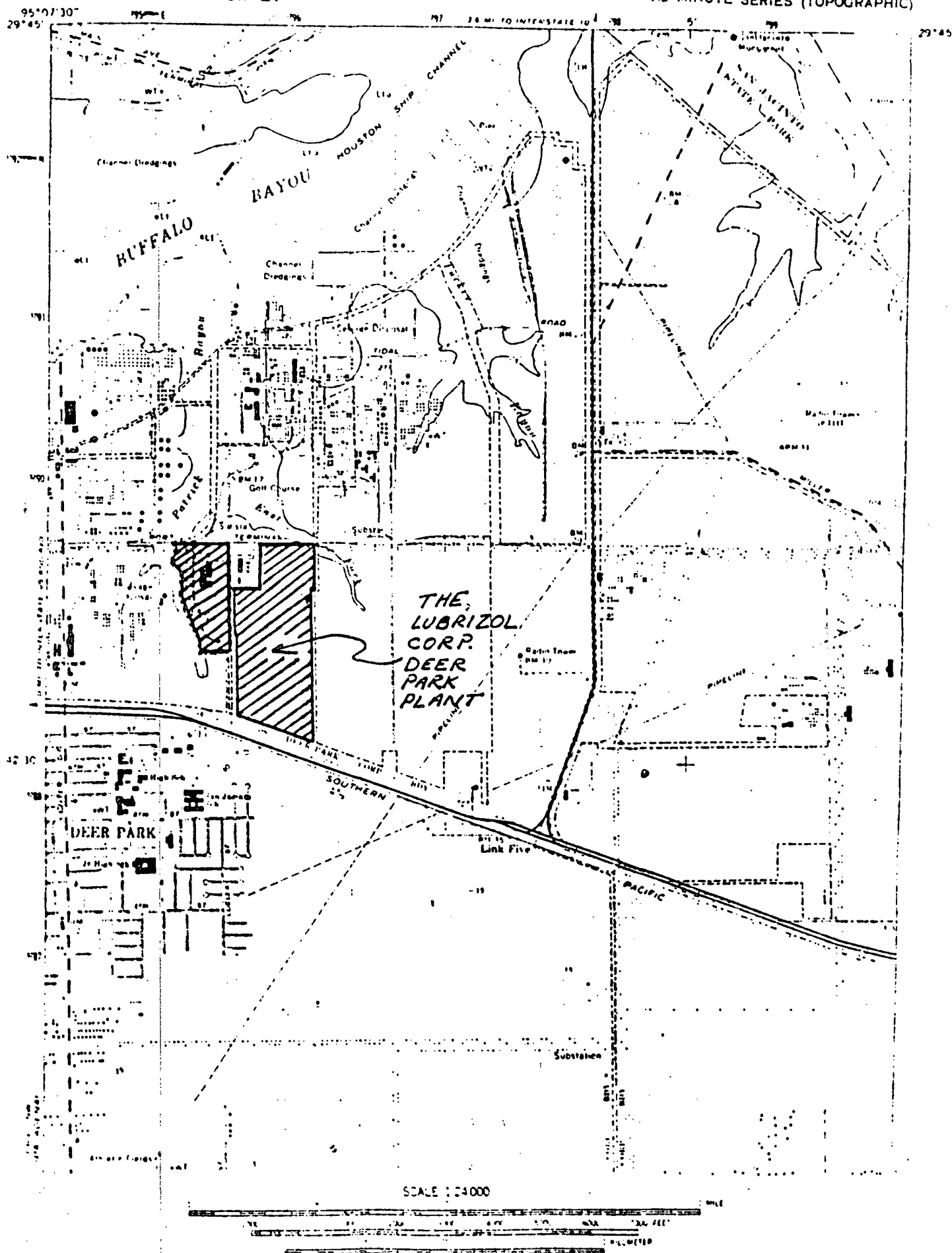
The attached information applies to tanks B-32 and WO-6. No information is included for tanks J-42 and CA-1 because these tanks contain aqueous salt solutions which produce no air contaminants other than water vapor. The contents of these tanks are considered hazardous because of pH.

The following information is included for B-32 and WO-6:

1. Area map showing the plant location in relation to surrounding buildings, schools, residences, etc.
2. Plot plan showing plant layout, including B-32 and WO-6 locations.
3. Description of air contaminants, emission rates, and supporting calculations.
4. Flow charts and description of B-32 and WO-6 function.
5. Composition of waste and amounts handled.
6. Emission point parameters.
7. Documentation of compliance with Federal New Source Performance Standard and Federal National Emission Standard for Hazardous Air Pollutants.
8. Atmospheric dispersion modeling results.
9. Storage tank data.

NOTE: Some information requested for TACB review does not apply to this application because neither of the tanks is a new, modified, or major source. Also, neither vessel is equipped with an emission control device.

AAL:ms
0739C



B-32 29°43'9.3"
95°06'56.9"

W0-6 29°43'10.6"
95°06'56.7"

B-32

W0-6

SHILL CHEMICAL CO

LAGOON

UNIT

SHUP'S
WHSE

WHSE

WHSE

Benchmark
29°43'14"N
95°06'46"W

UNION CARBIDE

PETITION
POND

ROUTE 1144, E2

DATE
BY

B-32 Emissions

Source Emissions: 56.6 Lb/Year MEK and Toluene
(73% MEK, 27% Toluene)

Fugitive Emissions 3,979 Lb/Year VOC including
442 Lb/Year MEK and
442 Lb/Year Toluene

Total Emissions: 483 Lb/Year MEK
457 Lb/Year Toluene
3,095 Lb/Year other VOC

Maximum Emission Rate: 0.043 Lb/Min. MEK
0.016 Lb/Min. Toluene

WO-6 Emissions

Source Emissions: 96.9 Lb/Year MEK and Toluene
(73% MEK, 27% Toluene)

Fugitive Emissions 845 Lb/Year VOC including
94 Lb/Year MEK and
94 Lb/Year Toluene

Total Emissions: 165 Lb/Year MEK
120 Lb/Year Toluene
657 Lb/Year other VOC

Maximum Emission Rate: 0.043 Lb/Min. MEK
0.016 Lb/Min. Toluene

Emissions Calculations

Worst case contents for either B-32 or WO-6

	<u>Total</u>	<u>Less Sand & Silt</u>	<u>M.W.</u>	<u>Moles</u>	<u>Mole Fract.</u>	<u>Vapor Press.</u>
MEK	10%	10.5%	72	0.146	0.194	0.14 psia @80°F.
Toluene	10%	10.5%	92	0.114	0.151	0.04
Sand & Silt	5%	--	--	--	--	--
Diluent Oil	30%	31.5%	~ 260	0.121	0.161	Negligible
Alk. Succinamide	20%	21.0%	~ 520	0.040	0.053	"
Ca. Sulfonate	20%	21.0%	~ 800	0.026	0.035	"
Water	5%	5.5%	18	0.306	0.406	0.50
	100%	100.0%		0.753	1.000	

$$\text{Mol. Wt. of organic vapor} = (0.146 \times 72 + 0.114 \times 92) / (0.146 + 0.114) = 80.8$$

$$\text{Organic chemical vapor pressure} = (0.194 \times 0.14) + (0.151 \times 0.04) = 0.033 \text{ psia}$$

B-32 losses based on AP-42 fixed roof working and breathing loss calculations.

$$L_W = 2.40 \times 10^{-2} \times 80.8 \times 0.033 \times 1 \times 1 = 0.065 \text{ Lb/1000 gallons or 2.6 Lb/Year}$$

$$L_B = 2.21 \times 10^{-4} \times 80.8 \left[\frac{0.033}{14.7 - 0.033} \right]^{0.68} \times 10^{1.73} \times 12.5^{0.51} \times 21^{0.50} \times 1.15 \times 0.51 \times 1$$

$$= 0.148 \text{ Lb/Day or 54.0 Lb/Year MEK \& Toluene}$$

(73% MEK, 27% Toluene)

B-32 Fugitive losses based on U.S. EPA 450/3-82-010

Pump Seals (Light Liquid)	0.0494	Kg/Hr x 1	=	0.0494
Valves (Light Liquid)	0.0071	Kg/Hr x 16	=	0.1136
Flanges	0.00083	Kg/Hr x 42	=	0.0349
Open Ended Valves	0.0017	Kg/Hr x 3	=	0.0051
Sampling Connections	0.0150	Kg/Hr x 1	=	0.0150

0.2180 Kg/Hr

$$0.2180 \text{ Kg/Hr} = 4,211 \text{ Lb/Year}$$

$$\text{Total VOC} = 94.5\% \times 4,211 \times 0.945 = 3,979 \text{ Lb VOC/Year}$$

$$\text{MEK} = 10.5\% \times 4,211 \times 0.105 = 442 \text{ Lb MEK/Year}$$

$$\text{Toluene} = 10.5\% \times 4,211 \times 0.105 = 442 \text{ Lb Toluene/Year}$$

Emissions Calculations - Continued...

WO-6 Losses based on AP-42 fixed roof working and breathing loss calculations

$$L_W = 2.40 \times 10^{-2} \times 80.8 \times 0.033 \times 1 \times 1 = 0.065 \text{ Lb/1000 gallons or } 2.6 \text{ Lb/Year}$$

$$L_B = 2.21 \times 10^{-4} \times 80.8 \left[\frac{0.033}{14.7 - 0.033} \right]^{0.68} \times 14.92^{1.73} \times 9.6^{0.51} \times 21^{0.50} \times 1.15 \times 0.51 \times$$

= 0.258 Lb/Day or 94.3 Lb/Year MEK & Toluene
(73% MEK, 27% Toluene)

WO-6 Fugitive losses based on U.S. EPA 450/3-82-010

Valves (Light Liquid)	0.0071 Kg/Hr x 5	= 0.0355
Flanges	0.00083 Kg/Hr x 11	= 0.0091
Open Ended Valves	0.0017 Kg/Hr x 1	= <u>0.0017</u>

$$0.0463 \text{ Kg/Hr}$$

$$0.0463 \text{ Kg/Hr} = 894 \text{ Lb/Year}$$

Total VOC	=	94.5%	894 x 0.945	=	845 Lb VOC/Year
MEK	=	10.5%	894 x 0.105	=	94 Lb MEK/Year
Toluene	=	10.5%	894 x 0.105	=	94 Lb Toluene/Year

Maximum one time emission assuming 5,000 gallons transferred to B-32 or WO-6 at 200 gallons/minute. This is equal to displacement of 670 cubic feet of saturated air in 25 minutes (or 26.8 cubic feet per minute).

YMEK	=	0.14/14.7	=	0.010
YTOL	=	0.04/14.7	=	0.003
YH ₂ O	=	0.50/14.7	=	0.034
YAIR	=	1-YMEK-YTOL-YH ₂ O	=	0.953

$$\text{Total Moles} = 670 \text{ ft}^3 / 459 \text{ ft}^3 / \text{Lb Mol} = 1.5 \text{ Lb Mol}$$

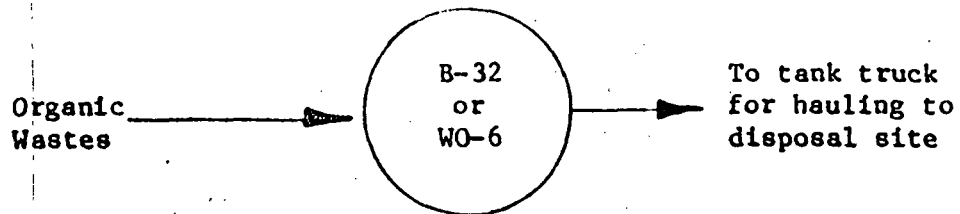
MEK	=	1.5 Lb Mol x 0.010 Mol MEK/Lb Mol x 72 Lb MEK/Mol	MEK	=	1.08 Lb
Toluene	=	1.5 Lb Mol x 0.0003 Mol Tol/Lb Mol x 92 Lb Tol/Mol	Tol	=	0.41 Lb

Max. rate of emission over 25 minute period:

1.08 Lb MEK/25 minutes	=	0.043 Lb/Min MEK
0.41 Lb Tol/25 minutes	=	0.016 Lb/Min Toluene

PROCESS DESCRIPTION & FLOW CHART

Both B-32 and WO-6 are holding tanks for miscellaneous organic waste. Organic wastes are collected in the two tanks until the volume is sufficient for trucking for disposal.



COMPOSITION OF WASTE B-32 & WO-6

Organic

Diluent Oil (Paraffinic & Naphthenic)	30-40% weight
Alkylated Succinamide	10-20%
Methyl Ethyl Ketone	5-10%
Toluene	5-10%
Calcium Sulfonate	10-20%

Inorganic

Water	5-15%
Sand & Silt	0- 5%

Throughput of waste; 40,000 gallons/year.

Either B-32 or WO-6 may handle up to 100% of his waste with the other tank handling the balance.

EMISSION POINT PARAMETERS

B-32

Emission point is a 2" diameter goosenecked pipe vent to the atmosphere. The opening of the vent is approximately two feet above the tank top and is about 27 feet above grade.

The vent temperature will match the tank's 80°F average annual temperature. The maximum temperature will be approximately 100°F.

Average vent velocity based on working and breathing losses of 56.6 pounds per year is 2.1 feet per minute.

Maximum vent velocity based on 200 gallons per minute pumping rate into the tank is 1,148 ft/minute. The emission rate corresponding to 200 gallons per minute pumping is 0.059 pounds per minute MEK and toluene.

WO-6

Emission point is a 2" diameter vertical pipe vent to the atmosphere. The opening of the vent is approximately one foot above the tank top, and is about 20 feet above grade.

The vent temperature will match the tank's 80°F average annual temperature. The maximum temperature will be approximately 100°F.

Average vent velocity based on working and breathing losses of 96.9 pounds per year is 3.6 feet per minute.

Maximum vent velocity based on 200 gallons per minute pumping rate into the tank is 1,148 ft/minute. The emission rate corresponding to this 200 gallon per minute is 0.059 pounds per minute.

DOCUMENTATION OF COMPLIANCE NSPS, NESHAPS

NSPS

Neither tank is covered by NSPS because each was in service before the standard become effective. B-32 was placed in service during 1958. WO-6 was placed in service during 1965.

NESHAPS

The waste held in the two tanks contains none of the regulated substances listed in 50 Fed. Reg. 46290, November 7, 1985.

**DISPERSION ANALYSIS
OF
ATMOSPHERIC EMISSIONS
FROM
STORAGE TANKS**

D997-000

January 1986

Prepared for:

The Lubrizol Corporation

Prepared by:

**ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
12012 Wickchester, Suite 200
Houston, Texas 77079**

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PREFACE

This is to certify that the atmospheric dispersion modeling described herein was performed in accordance with the established procedures and techniques of the Texas Air Control Board.

1.0 INTRODUCTION

The Lubrizol Corporation submitted an RCRA Part B permit application to the Texas Water Commission (TWC). On October 1, 1985, TWC requested information regarding atmospheric emissions from each applicant. Environmental Research and Technology, Inc. (ERT) was retained to respond to Item 12, an analysis of 30-minute and annual-average concentrations of potentially toxic air pollutants. This facility will permit small amounts of volatile organic compounds (VOCs) into the atmosphere, some of which may have potentially harmful effects to humans. Specifically, two VOC constituents were identified as potentially toxic; they are methylethylketone (MEK) and toluene. There are no other hazardous components.

The remainder of this report is divided into four additional sections. Section 2 describes the storage tank locations and their pollutant emissions. Section 3 addresses the standards for the emissions based on health effects that must be attained. Section 4 provides the methodology of the impact analysis, and Section 5 summarizes the analytical sections (Sections 2, 3 and 4) and presents conclusions gathered from the analysis. Attachments 1 through 4 are included in support of the impact analysis.

2.0 THE FACILITY AND ATMOSPHERIC VOC EMISSIONS

The facility is located in a heavily industrialized area between the Houston Ship Channel and Highway 225, northeast of Deer Park, Texas. The emissions of concern are generated from two storage tanks and accompanying fugitive emissions from valves, flanges and connections.

The specific compounds of VOC emissions for which published threshold limit values (TLVs) exist are methylethylketone and toluene. Annual storage tank emissions were supplied by Lubrizol and were based on AP-42 breathing and working losses. Attachment 1 provides detailed calculations. Fugitive losses, also supplied by Lubrizol, were calculated based on emission factors from an Environmental Protection Agency document (EPA-450/3-82-010) and the number of valves, flanges, open-ended lines, and sampling connections. A summary of total annual VOC emission rates are:

<u>Storage Tank No.</u>	<u>Total VOC Tank Emission Rate (lb/year)</u>	<u>Total VOC Fugitive Emission Rate (lb/year)</u>
B-32	56.6	3,979
WO-6	96.9	845

Based on proportions of 73% MEK and 27% toluene, the following annual-average emission rates result:

<u>Compound</u>	<u>Storage Tank No.</u>	<u>Tank Emission Rate (lb/year) (g/sec)</u>		<u>Fugitive Emission Rate (lb/year) (g/sec)</u>	
MEK	WO-6	70.7	0.0010175	47	0.000676
Toluene	WO-6	26.2	0.0003763	47	0.000676
MEK	B-32	41.3	0.005943	221	0.003179
Toluene	B-32	15.3	0.0002198	221	0.003179

For the maximum one-time (or short-term) emission rate, a "worst case" scenario was developed that assumes a tank truck unloads 5,000 gallons of waste to WO-6 or B-32 at 200 gallons per minute. Assuming this occurs at B-32 during the unloading, the following B-32 tank emission rate is calculated as: $2.15 \text{ lb/hr} = 0.2709 \text{ g/sec}$ of MEK and $0.8 \text{ lb/hr} = 0.1008 \text{ g/sec}$ of toluene. Emission rates for all the fugitive and the WO-6 tank were assumed to be the same as in the annual-average cases.

3.0 HEALTH EFFECTS OR IMPACT LIMITATIONS

The Texas Air Control Board (TACB) is concerned with releases of potentially toxic chemicals into the air and has developed a screening method for determining impact levels below which health effects are considered inconsequential. This screening guideline states that a given compound will have insignificant health effects if the maximum off-site, long-term (annual-average) and short-term (30-minute average) concentrations are below one one-thousandth and one one-hundredth of the compound's TLV respectively. Simply stated, a compound's atmospheric impact is considered to have no potential health effects if its longand short-term maximum concentrations are respectively less than 0.1% and 1.0% of its TLV and if further analysis is not required.

In this analysis, there are two compounds for which TLVs are established. These and the subsequent longand short-term standards are as follows:

<u>Compound</u>	<u>TLV (ppb)</u>	<u>Short-term Standard (ppb)</u>	<u>Long-term Standard (ppb)</u>
MEK	200,000	2,000	200
Toluene	100,000	1,000	100

4.0 IMPACT ANALYSIS METHODOLOGY

The purpose of the impact analysis is to estimate maximum long-term and "worst case" short-term ground-level pollutant concentrations produced by the storage tanks and attendant facility. These VOC concentration estimates consist of expected annual-average values as well as 30-minute maximum values.

Two computerized atmospheric dispersion models were used to calculate the concentration estimates. Specifically, the Texas Climatological Model Version 2 (TCM-2) was used to calculate annual-average concentrations, and the sequential Texas Episodic Model Version 8 (TEM-8) was used to calculate short-term concentrations. The models were run in the urban mode.

Table 1 provides the stack parameters for both the long and short-term analyses. As the fugitive sources will be released at ambient temperatures and with no exit velocity, the sources were modeled with no plume rise and released at approximately 10 feet (3 meters) at tanks B-32 and WO-6 locations.

Both tanks are within the aerodynamic wake influence of a large cooling tower having dimensions of 60 feet by 41 feet. The models were therefore used with the Huber-Snyder downwash algorithm. An equivalent diameter of 56 feet was calculated (17 meters) to simulate H_W . The height of the structure is 53 feet (16 meters) and was used to simulate H_B .

4.1 Long-Term Analysis

The TCM-2 was used to predict annual concentrations of MEK and toluene. The meteorological data used were from data collected at the Houston Hobby Airport during a 9-year period from 1961 to 1969. This represents a day-night star program (joint frequency distribution); see

TABLE 1

STACK PARAMETERS

	<u>Tank B-32</u>	<u>Tank WO-6</u>	<u>Fugitive</u>
UTM Coordinates*			
Easterling (km)	295.34	295.35	same as tanks
Northerling (km)	3,289.39	3,289.43	same as tanks
Height (m)	7.62	5.79	3.0
Diameter (m)	0.01	0.01	0.01
Velocity (m/sec)	0.01	0.01	0.01
Temperature (°C)	21°C	21°C	21°C

* Zone 15

Attachment 2. Since the sources are all low-level releases with no plume rise, a very fine grid spacing of 20 meters with the sources in the center of a 25 by 25 foot grid was chosen for the modeling.

Annual emission rates provided in Section 2 were utilized in the analyses. Model output printout is included in Attachment 3.

4.2 Short-Term Analysis

The TEM-8 Model was used to predict 30-minute maximum concentrations of MEK and toluene. The surface data was gathered at Hobby Field in Houston, Texas, with upper air data from Lake Charles, Louisiana. For the sake of brevity, these hourly data are not presented herein.

The reported wind directions (i.e., in 10 degree sectors) were used with calm wind speed conditions skipped. The same receptor grid was used as for the long-term modeling. Model output printout is included in Attachment 4.

5.0 RESULTS AND CONCLUSIONS

5.1 Long-Term

The maximum annual predicted concentrations for MEK and toluene are as follows:

Pollutant	UTM Coordinates		Maximum Concentration		Guideline
	X(km)	Y(km)	($\mu\text{g}/\text{m}^3$)	(ppb)	Limitation (ppb)
MEK	295.32	3,289.44	1.0	0.3	200.0
Toluene	295.32	3,289.44	0.9	0.2	100.0

The location of the maximum for both MEK and toluene are both "on-site"; diminished concentrations occur "off-property". As indicated, the maximum predicted concentrations are several orders of magnitude less than the impact standard. No adverse health impacts are indicated.

5.2 Short-Term

The maximum 30-minute concentrations for MEK and toluene are as follows:

<u>Pollutant</u>	<u>UTM Coordinates</u>		<u>Maximum Concentration</u>		<u>Guideline</u>
	<u>X(km)</u>	<u>Y(km)</u>	<u>($\mu\text{g}/\text{m}^3$)</u>	<u>(ppb)</u>	<u>Limitation</u>
MEK	295.34	3,289.34	719.8	240.0	2,000.0
Toluene	295.34	3,289.34	281.3	73.4	1,000.0

As in the long-term analysis, these maximum impact locations occur on-site with lesser impacts off-site. However, even these maximum on-site values are very small in comparison with the guideline limits.

In general, it is obvious that this facility's atmospheric impact is very small in comparison with the TACB health effect review criteria.

ATTACHMENT 1

**Supporting Calculations
and
Emission Estimates**

TANK WO-6

$$\text{Tank } Q_{\text{MEK}} \rightarrow 96.9 \text{ lb/yr}^* \times .73 \text{ (proportion of MEK)} \\ = 70.74 \text{ lb/yr} \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.008075 \text{ lb/hr}$$

$$0.008075 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/lb}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0010175 \text{ gm/sec}}$$

$$\text{Tank } Q_{\text{Toluene}} \rightarrow 96.9 \text{ lb/yr}^* \times .27 \text{ (proportion of Toluene)} \\ = 26.163 \text{ lb/yr} \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.002987 \text{ lb/hr}$$

$$0.002987 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/lb}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0003763 \text{ gm/sec}}$$

$$\text{Fugitive } Q_{\text{MEK+Toluene}} \rightarrow 94.0 \text{ lb/yr}^* \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right)$$

$$= 0.010731 \text{ lb/hr}$$

$$0.010731 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/lb}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.001352 \text{ gm/sec}}$$

* - Data supplied by Lubrizol Corporation

(Long-term)
TANK B-32

$$\text{Tank } Q_{\text{MEK}} \rightarrow 56.6 \text{ lb/hr}^* \times .73 = 41.318 \text{ lb/yr}$$

$$\times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.004717 \text{ lb/hr}$$

$$0.004717 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0005943 \text{ gm/sec}}$$

$$\text{Tank } Q_{\text{Toluene}} \rightarrow 56.6 \text{ lb/hr}^* \times .27 = 15.282 \text{ lb/yr}$$

$$15.282 \text{ lb/yr} \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.001745 \text{ lb/hr}$$

$$0.001745 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0002198 \text{ gm/sec}}$$

$$\text{Fugitive } Q_{\text{MEK \& Toluene}} \rightarrow 442 \text{ lb/yr}^* \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) =$$

$$0.050457 \text{ lb/hr}$$

$$0.050457 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.006358 \text{ gm/sec}}$$

* - Data supplied by Lubrizol Corporation

As supplied by Lubrizol, assume tanker truck unloads 5000 gal max of waste at B-32 at 200 gals/min. This is 670 ft³ / 25 minutes.

$$\text{Thus, } Q_{\text{MEK}} \rightarrow (0.043 \text{ lb/min})^* (25 \text{ min}) = 1,075 \text{ total lbs for unloading}$$

$$1,075 \text{ lb} / 30 \text{ min} = 0.035833 \text{ lb/min}$$

$$\times \left(\frac{60 \text{ min}}{\text{hr}} \right) = 2.15 \text{ lb/hr}$$

$$2.15 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{\text{lb/hr}} \right) = \boxed{0.2709 \text{ gm/sec}}$$

$$\text{And, } Q_{\text{Toluene}} \rightarrow (0.016 \text{ lb/min})^* 25 \text{ min} =$$

$$0.4 \text{ lbs} / 30 \text{ min} = 0.01333 \text{ lb/min}$$

$$\times \left(\frac{60 \text{ min}}{\text{hr}} \right) = 0.8 \text{ lb/hr}$$

$$0.8 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{\text{lb/hr}} \right) = \boxed{0.1008 \text{ gm/sec}}$$

Other emission rates for fugitives and tank WO-6 are SAME as long-term estimates

* Data supplied by Lubrizol Corporation

MEK - Methyl Ethyl Ketone

$$\text{ppb} = \frac{24.04}{72.10} \mu\text{g}/\text{m}^3$$

TLV is
200 ppm

$$\text{ppb} = 0.333426 \mu\text{g}/\text{m}^3$$

Toluene

$$\text{ppb} = \frac{24.04}{92.13} \mu\text{g}/\text{m}^3$$

TLV is 100 ppm

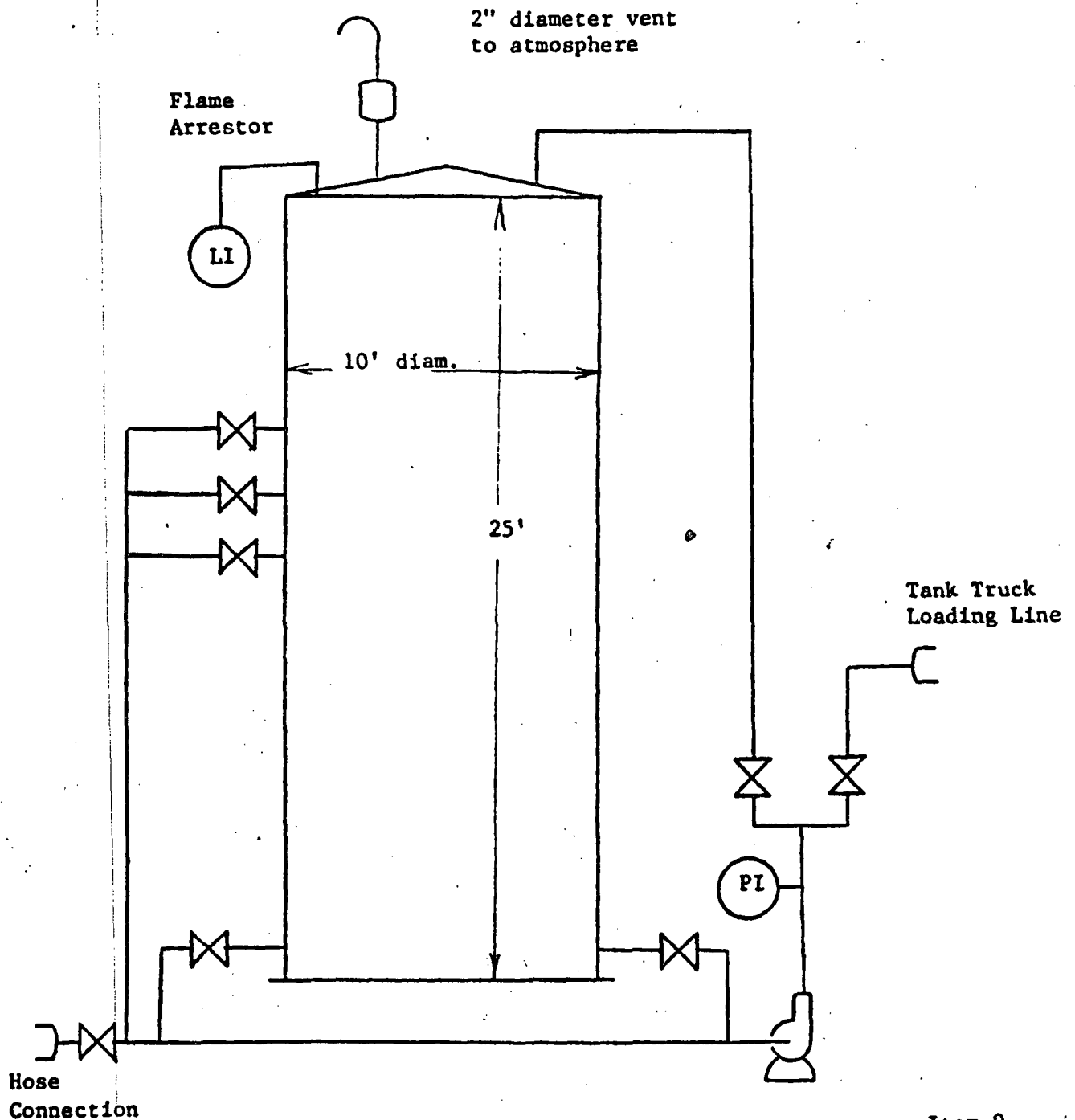
$$\text{ppb} = 0.260936 \mu\text{g}/\text{m}^3$$

295.46	3289.52	117.01	22	7	127.03	41	5	68.83	22	7	49.40	41	5
295.48	3289.52	117.06	32	24	117.06	104	5	45.72	32	24	45.72	104	5
295.50	3289.52	119.09	32	24	119.09	104	5	46.31	32	24	46.31	104	5
295.52	3289.52	108.20	30	24	108.20	147	1	42.50	30	24	42.50	147	1
295.54	3289.52	139.04	30	24	139.04	147	1	54.30	30	24	54.30	147	1
295.56	3289.52	145.41	30	24	145.41	147	1	56.62	30	24	56.62	147	1
295.58	3289.52	131.96	30	24	131.96	147	1	51.30	30	24	51.30	147	1
295.10	3289.54	124.61	167	2	124.61	314	5	48.53	167	2	48.53	314	5
295.12	3289.54	109.58	167	2	109.58	314	5	42.81	167	2	42.81	314	5
295.14	3289.54	130.46	76	21	130.46	80	6	50.62	76	21	50.62	80	6
295.16	3289.54	158.82	76	21	158.82	80	6	61.69	76	21	61.69	80	6
295.18	3289.54	149.34	76	21	149.34	80	6	58.17	76	21	58.17	80	6
295.20	3289.54	160.58	1	5	160.58	3	5	62.29	1	5	62.29	3	5
295.22	3289.54	188.70	1	5	188.70	3	5	73.34	1	5	73.34	3	5
295.24	3289.54	172.26	3	21	172.26	28	5	66.83	3	21	66.83	28	5
295.26	3289.54	207.33	3	21	207.33	28	5	80.70	3	21	80.70	28	5
295.28	3289.54	218.47	1	4	218.47	71	22	84.88	1	4	84.88	71	22
295.30	3289.54	180.73	2	2	180.73	141	23	70.57	1	4	70.57	71	22
295.32	3289.54	230.17	2	2	230.17	141	23	90.05	2	2	90.05	141	23
295.34	3289.54	247.57	2	3	247.57	86	23	96.84	2	3	96.84	86	23
295.36	3289.54	230.46	77	23	230.46	345	23	90.24	77	23	90.24	345	23
295.38	3289.54	182.63	77	23	182.63	345	23	71.62	77	23	71.62	345	23
295.40	3289.54	220.26	151	5	220.26	20	3	86.22	151	5	86.22	20	3
295.42	3289.54	208.91	147	2	208.91	289	24	81.85	147	2	81.85	289	24
295.44	3289.54	172.95	147	2	172.95	289	24	67.37	147	2	67.37	289	24
295.46	3289.54	175.23	22	7	175.23	41	5	68.44	22	7	68.44	41	5
295.48	3289.54	147.71	22	7	147.71	41	5	57.40	22	7	57.40	41	5
295.50	3289.54	100.06	32	24	100.06	104	5	39.12	32	24	39.12	104	5
295.52	3289.54	106.22	32	24	106.22	104	5	41.36	32	24	41.36	104	5
295.54	3289.54	87.14	32	24	87.14	104	5	33.86	32	24	33.86	104	5
295.56	3289.54	109.91	30	24	109.91	147	1	43.04	30	24	43.04	147	1
295.58	3289.54	124.91	30	24	124.91	147	1	48.74	30	24	48.74	147	1
295.10	3289.56	93.10	76	21	93.10	80	6	36.11	76	21	36.11	80	6
295.12	3289.56	124.31	76	21	124.31	80	6	48.26	76	21	48.26	80	6
295.14	3289.56	141.66	76	21	141.66	80	6	55.08	76	21	55.08	80	6
295.16	3289.56	129.83	76	21	129.83	80	6	50.64	76	21	50.64	80	6
295.18	3289.56	138.34	1	5	138.34	3	5	53.67	1	5	53.67	3	5
295.20	3289.56	168.48	1	5	168.48	3	5	65.49	1	5	65.49	3	5
295.22	3289.56	133.45	1	5	133.45	3	5	52.18	1	5	52.18	3	5
295.24	3289.56	187.69	3	21	187.69	28	5	72.92	3	21	72.92	28	5
295.26	3289.56	147.86	3	21	147.86	28	5	57.88	3	21	57.88	28	5
295.28	3289.56	204.86	1	4	204.86	71	22	79.79	1	4	79.79	71	22
295.30	3289.56	185.33	2	2	185.33	141	23	72.08	2	2	72.08	141	23
295.32	3289.56	189.73	2	2	189.73	141	23	74.36	2	2	74.36	141	23
295.34	3289.56	218.49	2	3	218.49	86	23	85.45	2	3	85.45	86	23
295.36	3289.56	189.41	77	23	189.41	345	23	74.10	77	23	74.10	345	23
295.38	3289.56	186.90	77	23	186.90	345	23	73.27	77	23	73.27	345	23
295.40	3289.56	206.20	151	5	206.20	20	3	80.77	151	5	80.77	20	3
295.42	3289.56	148.53	147	2	148.53	289	24	58.33	147	2	58.33	289	24
295.44	3289.56	188.79	147	2	188.79	289	24	73.73	147	2	73.73	289	24
295.46	3289.56	125.35	147	2	125.35	289	24	48.76	147	2	48.76	289	24
295.48	3289.56	154.32	22	7	154.32	41	5	60.19	22	7	60.19	41	5
295.50	3289.56	125.79	22	7	125.79	41	5	48.90	22	7	48.90	41	5
295.52	3289.56	86.93	32	24	86.93	104	5	34.02	32	24	34.02	104	5
295.54	3289.56	94.76	32	24	94.76	104	5	36.94	32	24	36.94	104	5
295.56	3289.56	83.07	32	24	83.07	104	5	32.31	32	24	32.31	104	5
295.58	3289.56	86.51	30	24	86.51	147	1	33.95	30	24	33.95	147	1
295.10	3289.58	116.71	76	21	116.71	80	6	45.34	76	21	45.34	80	6
295.12	3289.58	126.82	76	21	126.82	80	6	49.35	76	21	49.35	80	6
295.14	3289.58	114.36	76	21	114.36	80	6	44.65	76	21	44.65	80	6
295.16	3289.58	120.97	1	5	120.97	3	5	46.95	1	5	46.95	3	5

295.32	3289.58	159.76	2	2	159.76	141	23	62.66	2	2	62.66	141	23
295.34	3289.58	196.47	2	3	196.47	86	23	76.81	2	3	76.81	86	23
295.36	3289.58	159.20	77	23	159.20	345	23	62.21	77	23	62.21	345	23
295.38	3289.58	184.10	77	23	184.10	345	23	72.09	77	23	72.09	345	23
295.40	3289.58	173.74	151	5	115.83	20	3	68.04	151	5	45.38	20	3
295.42	3289.58	163.42	151	5	109.00	20	3	63.85	151	5	42.58	20	3
295.44	3289.58	163.69	147	2	163.69	289	24	64.10	147	2	64.10	289	24
295.46	3289.58	155.38	147	2	155.38	289	24	60.59	147	2	60.59	289	24
295.48	3289.58	121.38	22	7	91.64	147	2	47.54	22	7	35.63	147	2
295.50	3289.58	135.79	22	7	100.45	41	5	52.95	22	7	39.19	41	5
295.52	3289.58	108.80	22	7	80.88	41	5	42.31	22	7	31.47	41	5
295.54	3289.58	76.52	32	24	76.52	104	5	29.96	32	24	29.96	104	5
295.56	3289.58	84.82	32	24	84.82	104	5	33.09	32	24	33.09	104	5
295.58	3289.58	78.01	32	24	78.01	104	5	30.37	32	24	30.37	104	5
295.10	3289.60	114.07	76	21	114.07	80	6	44.43	76	21	44.43	80	6
295.12	3289.60	101.83	76	21	101.83	80	6	39.79	76	21	39.79	80	6
295.14	3289.60	107.08	1	5	107.08	3	5	41.57	1	5	41.57	3	5
295.16	3289.60	133.91	1	5	133.91	3	5	52.07	1	5	52.07	3	5
295.18	3289.60	128.37	1	5	128.37	3	5	50.09	1	5	50.09	3	5
295.20	3289.60	122.81	3	21	122.81	28	5	47.68	3	21	47.68	28	5
295.22	3289.60	154.16	3	21	154.16	28	5	60.00	3	21	60.00	28	5
295.24	3289.60	122.92	3	21	122.92	28	5	48.15	3	21	48.15	28	5
295.26	3289.60	164.41	1	4	164.41	71	22	63.98	1	4	63.98	71	22
295.28	3289.60	138.56	1	4	138.56	71	22	54.29	1	4	54.29	71	22
295.30	3289.60	173.27	2	2	173.27	141	23	67.54	2	2	67.54	141	23
295.32	3289.60	135.84	2	2	135.84	141	23	53.32	2	2	53.32	141	23
295.34	3289.60	178.28	2	3	178.28	86	23	69.68	2	3	69.68	86	23
295.36	3289.60	135.12	77	23	135.12	345	23	52.76	77	23	52.76	345	23
295.38	3289.60	174.06	77	23	174.06	345	23	68.13	77	23	68.13	345	23
295.40	3289.60	138.53	151	5	107.72	77	23	54.24	151	5	42.14	77	23
295.42	3289.60	165.30	151	5	110.25	20	3	64.65	151	5	43.12	20	3
295.44	3289.60	123.14	147	2	123.14	289	24	48.29	147	2	48.29	289	24
295.46	3289.60	154.88	147	2	154.88	289	24	60.53	147	2	60.53	289	24
295.48	3289.60	123.27	147	2	123.27	289	24	48.03	147	2	48.03	289	24
295.50	3289.60	115.49	22	7	85.93	41	5	41.17	22	7	33.63	41	5
295.52	3289.60	119.86	22	7	89.62	41	5	46.72	22	7	34.95	41	5
295.54	3289.60	95.32	22	7	71.60	41	5	37.07	22	7	27.86	41	5
295.56	3289.60	68.09	32	24	68.09	104	5	26.66	32	24	26.66	104	5
295.58	3289.60	76.28	32	24	76.28	104	5	29.78	32	24	29.78	104	5
295.10	3289.62	91.49	76	21	91.49	80	6	35.77	76	21	35.77	80	6
295.12	3289.62	95.75	1	5	95.75	3	5	37.18	1	5	37.18	3	5
295.14	3289.62	120.05	1	5	120.05	3	5	46.68	1	5	46.68	3	5
295.16	3289.62	121.13	1	5	121.13	3	5	47.24	1	5	47.24	3	5
295.18	3289.62	96.43	3	21	96.43	28	5	37.43	3	21	37.43	28	5
295.20	3289.62	135.07	3	21	135.07	28	5	52.52	3	21	52.52	28	5
295.22	3289.62	133.09	3	21	133.09	28	5	51.96	3	21	51.96	28	5
295.24	3289.62	126.06	1	4	126.06	71	22	48.99	1	4	48.99	71	22
295.26	3289.62	152.22	1	4	152.22	71	22	59.37	1	4	59.37	71	22
295.28	3289.62	118.01	2	2	118.01	141	23	45.88	2	2	45.88	141	23
295.30	3289.62	160.30	2	2	160.30	141	23	62.56	2	2	62.56	141	23
295.32	3289.62	116.64	2	2	116.64	141	23	45.80	2	2	45.80	141	23
295.34	3289.62	163.00	2	3	163.00	86	23	63.71	2	3	63.71	86	23
295.36	3289.62	117.42	2	3	117.42	86	23	46.05	2	3	46.05	86	23
295.38	3289.62	160.74	77	23	160.74	345	23	62.89	77	23	62.89	345	23
295.40	3289.62	118.80	77	23	118.80	345	23	46.48	77	23	46.48	345	23
295.42	3289.62	152.79	151	5	101.90	20	3	59.78	151	5	39.87	20	3
295.44	3289.62	126.71	151	5	84.94	147	2	49.48	151	5	33.33	147	2
295.46	3289.62	133.51	147	2	133.51	289	24	52.26	147	2	52.26	289	24
295.48	3289.62	135.62	147	2	135.62	289	24	52.94	147	2	52.94	289	24
295.50	3289.62	96.74	147	2	96.74	289	24	37.67	147	2	37.67	289	24
295.52	3289.62	107.80	22	7	61.05	41	5	42.13	22	7	31.69	41	5

295.18	3289.64	113.82	3	21	113.62	28	5	44.24	3	21	44.24	28	5
295.20	3289.64	129.10	3	21	129.10	28	5	50.32	3	21	50.32	28	5
295.22	3289.64	104.41	3	21	104.41	28	5	40.91	3	21	40.91	28	5
295.24	3289.64	132.50	1	4	132.50	71	22	51.56	1	4	51.56	71	22
295.26	3289.64	133.26	1	4	133.26	71	22	52.08	1	4	52.08	71	22
295.28	3289.64	123.09	2	2	123.09	141	23	47.90	2	2	47.90	141	23
295.30	3289.64	146.35	2	2	146.35	141	23	57.17	2	2	57.17	141	23
295.32	3289.64	112.47	2	3	112.47	86	23	43.81	2	3	43.81	86	23
295.34	3289.64	149.96	2	3	149.96	86	23	58.61	2	3	58.61	86	23
295.36	3289.64	113.19	2	3	113.19	86	23	44.36	2	3	44.36	86	23
295.38	3289.64	146.53	77	23	146.53	345	23	57.31	77	23	57.31	345	23
295.40	3289.64	123.79	77	23	123.79	345	23	48.43	77	23	48.43	345	23
295.42	3289.64	133.47	151	5	89.02	20	3	52.23	151	5	34.83	20	3
295.44	3289.64	133.10	151	5	88.78	20	3	52.02	151	5	34.69	20	3
295.46	3289.64	104.47	147	2	104.47	289	24	40.93	147	2	40.93	289	24
295.48	3289.64	129.55	147	2	129.55	289	24	50.65	147	2	50.65	289	24
295.50	3289.64	114.24	147	2	114.24	289	24	44.56	147	2	44.56	289	24
295.52	3289.64	83.46	22	7	76.05	147	2	37.69	22	7	29.60	147	2
295.54	3289.64	99.64	22	7	75.64	41	5	38.91	22	7	29.56	41	5
295.56	3289.64	94.90	22	7	72.36	41	5	36.98	22	7	28.21	41	5
295.58	3289.64	75.39	22	7	57.72	41	5	29.33	22	7	22.47	41	5

B-32 Capacity: 15,076 Gallons
 Diameter: 10 Feet
 Height: 25 Feet
Paint Color: White
Composition: Carbon Steel
Average Annual Operating Temperature: 80°F
Turnovers per year: 2.7 Maximum
For waste composition, see emissions calculation.



WO-6

Capacity: 25,320 Gallons

Diameter: 15 Feet

Height: 19'3"

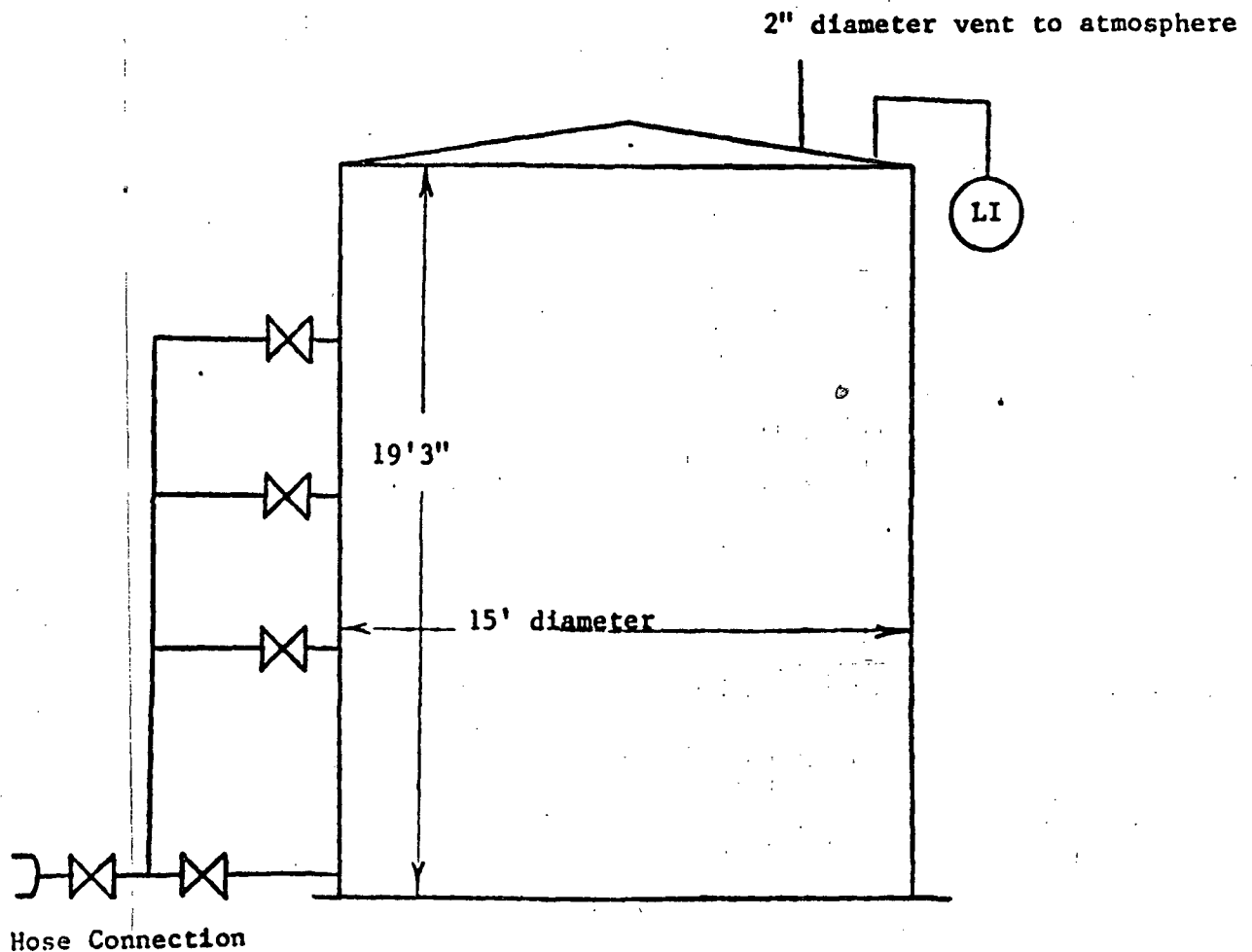
Paint Color: White

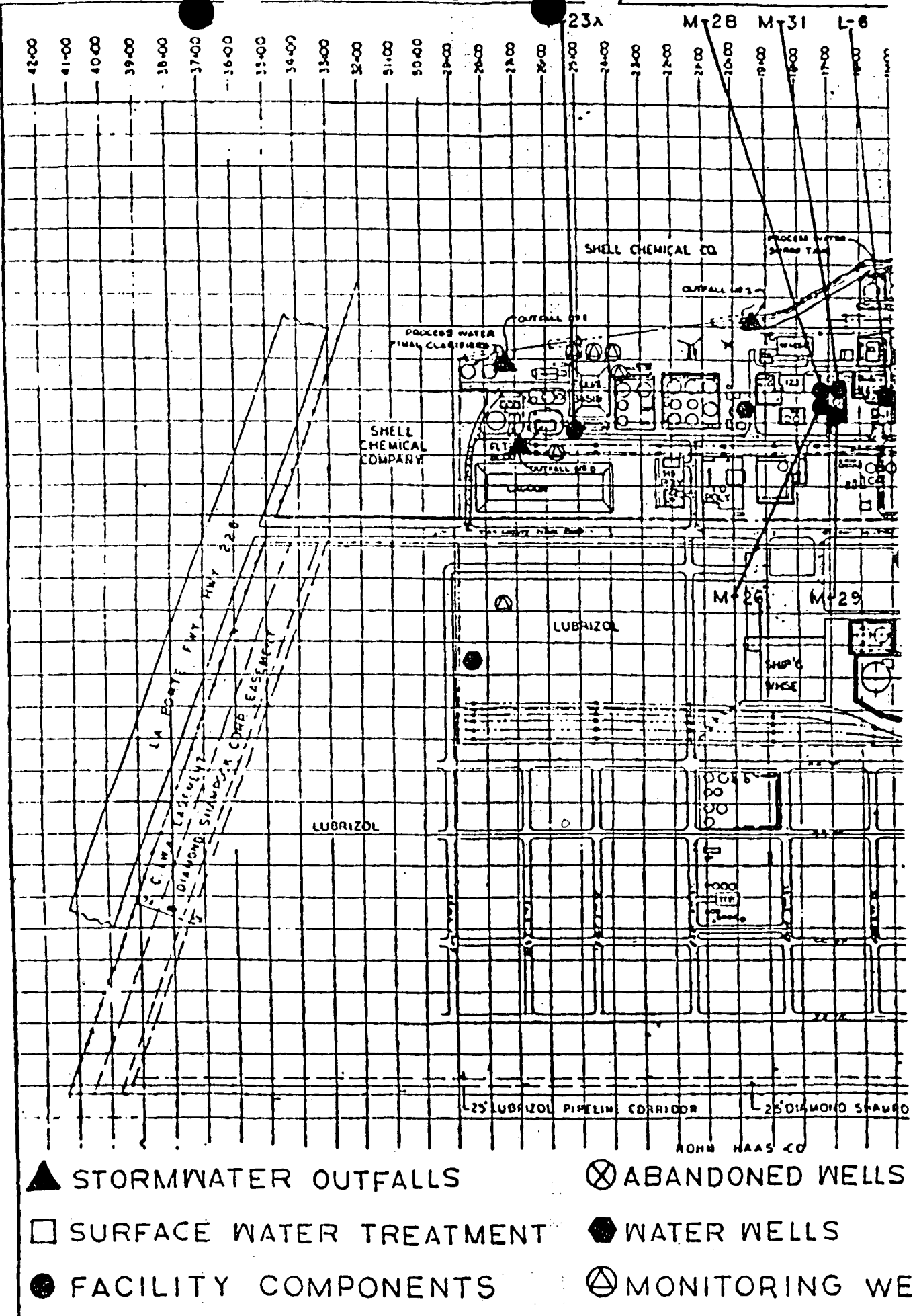
Composition: Carbon Steel

Average Annual Operating Temperature: 80°F

Turnovers per year: 1.6 Maximum

For waste composition, see emissions calculation.







③ MONITORING WELLS

										THE LORSON CORPORATION CHICAGO, ILL. 60606	
										WATER DISCHARGE SYSTEM	
										MODEL NO. 1000 SERIAL NO. 1000	

Tank Designation: WO-6

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM-615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank was strengthened when constructed using ASTM 36A carbon steel plate. The tank shell is 0.180" thick.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank roof.

The liquid contained in the tank has a typical specific gravity of 0.9. Attachment 5 shows piping, instrumentation, and flows associated with tank WO-6.

2. Compatibility and Material of Construction Properties

Based on technical information supplied by Ryerson Steel Co., ASTM 36A carbon steel plate has excellent corrosion rates when exposed to Methyl ethyl ketones, miscellaneous alcohols and low molecular hydrocarbons. Therefore, the hazardous waste are compatible with materials of construction.

ASTM 36A Carbon Steel Plate Properties

Tensile Strength	58-80 KSI
Yield Strength	36 KSI min.
Elongation at 2"	23%
Elongation at 8"	20%
Brinell Hardness	137

3. Overfill and Spill Control

The tank is equipped with a manometer which is used to measure the amount of liquid in the tank. Operating procedures have been established whereby 75% of the tank volume is not exceeded. The tank level is gauged twice a day.

If a tank leak or rupture would develop, material would flow into the process drain with an ultimate destination of the #1 lift station. From the #1 lift station, the material would be pumped to E-1 or E-2. E-1 and E-2 are two 110,160 gallon carbon steel tanks which can be used in an immediate response to a spill.

4. Special Requirements for Reactive Waste

No reactive wastes are placed in tank WO-6.

5. Special Requirements for Reactive Waste

Materials stored in tank WO-6 are ignitable having a flash point of less than 140°F.

Following are procedures used to add:

- A. The ignitable waste is pumped to the tank from vacuum tracks that collect miscellaneous organic materials from the process and laboratory collection areas.
- B. The addition of the waste causes no reaction or generation of heat, toxic mists, fumes or gases in sufficient quantities to threaten human health or the environment.
- C. The ignitable waste is stored in tank WO-6 in such a way that it is protected from conditions which may cause the waste to ignite. The area where WO-6 is located is a no smoking area. A "hot work" permit system is used at the plant to ensure that no ignition sources are heated that may ignite the waste.

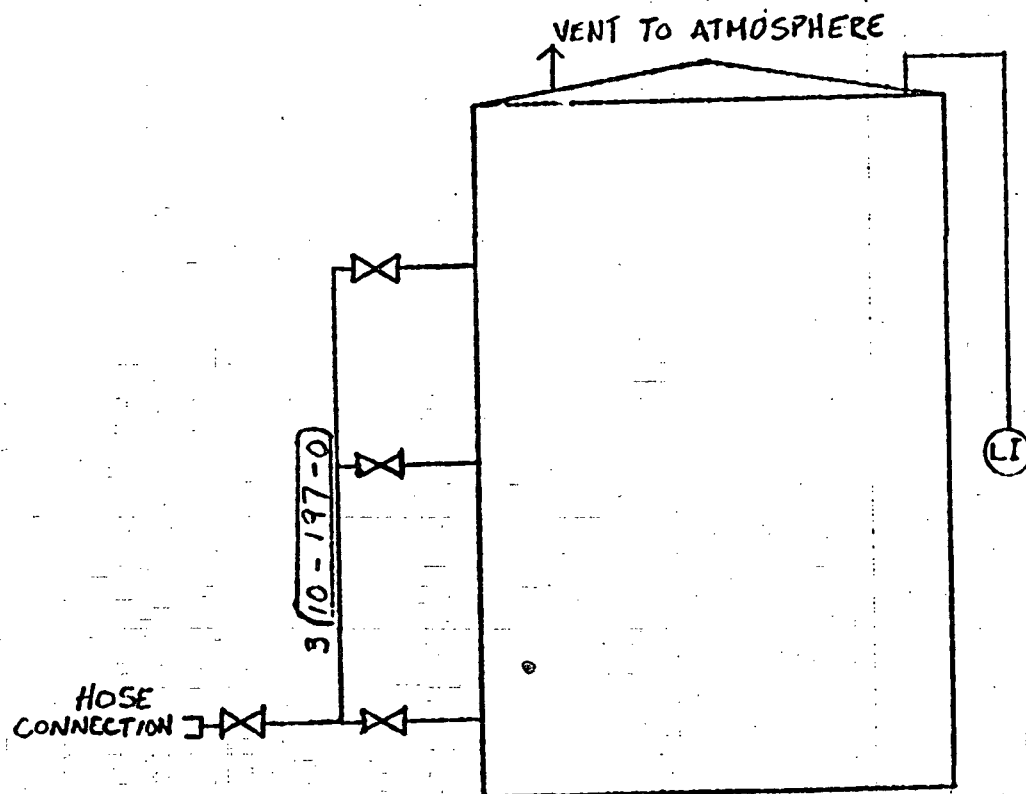
6. Tank Inspection Procedures

The tank is equipped with a manometer which is used to measure the liquid level in the tank twice a day.

Visual inspections of the tank shell exterior are made weekly. The shell is examined for evidence of corrosion of leaks. Special attention is given to seams in the tank shell.

The tank shell thickness is ultrasonically checked annually by a metallurgical consultant.

ATTACHMENT ~~VII~~
WO-6 PIPING AND INSTRUMENTATION DIAGRAM



BY _____
CHKD. BY _____ DATE _____

JOB NO. _____

ATTACHMENT VII
CONT.

1. WO-6 Dimensions

Diameter 15 ft.
Height 19 ft. 3 in.

2. WO-6 Wall Thickness - 0.180 in.

3. Tank, piping, and valves materials of construction - Carbon Steel

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Schedule</u>
3-(10-197-0)	3 in.	40

Tank Designation: CA-1

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM-615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank shell is 0.375" thick and rests on the tank foundation pad.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank roof.

The liquid contained in the tank has a typical specific gravity of 1.2. Attachment 4 shows piping, instrumentation, and flows associated with tank CA-1.

2. Compatibility and Material of Construction Properties

Based on literature supplied by Dow Chemical on the Derakane Vinyl Ester Resins, Derakane 470 has a maximum recommended service temperature of 210°F for sodium sulfite solutions. This maximum service temperature was determined by field or laboratory testing in accordance with ASTM C581-68. Since this tank is maintained at ambient temperatures, the hazardous waste managed in the tank is compatible with the material of construction.

Derakane 470-36 Resin Properties

Monomeric Styrene	36%
Tensile Strength	10-11, 000 PSI
Tensile Modulus	5.1×10^{-5} PSI
Elongation	3.0%
Flexural Strength	18-20,000 PSI
Flexural Modulus	5.5×10^{-5} PSI
Heat Distortion Temperature	295-305°F
Barcol Hardness	40

3. Overfill and Spill Control

The tank is equipped with a high level alarm that activates an audible alarm which can be heard in the process area.

When the alarm sounds, an investigation is made and the flow of material to the tank is shut off, if necessary. Operating procedures have been established whereby 75% of the tank volume is not exceeded. The tank level is gauged twice a day.

Tank CA-1 is surrounded by a 3 foot high concrete retaining wall. Valves that drain the diked area are kept closed at all time. Any spilled material will be vacuumed up and placed in CA-1, J-42 or disposed of off-site. See attached blue print for diked area dimensions and specifications.

4. Special Requirement for Ignitable or Reactive Wastes

No ignitable or reactive wastes are placed in tank CA-1.

5. Tank Inspection Procedures

The tank is equipped with a level transmitter which is used to measure the liquid level in the tank twice a day.

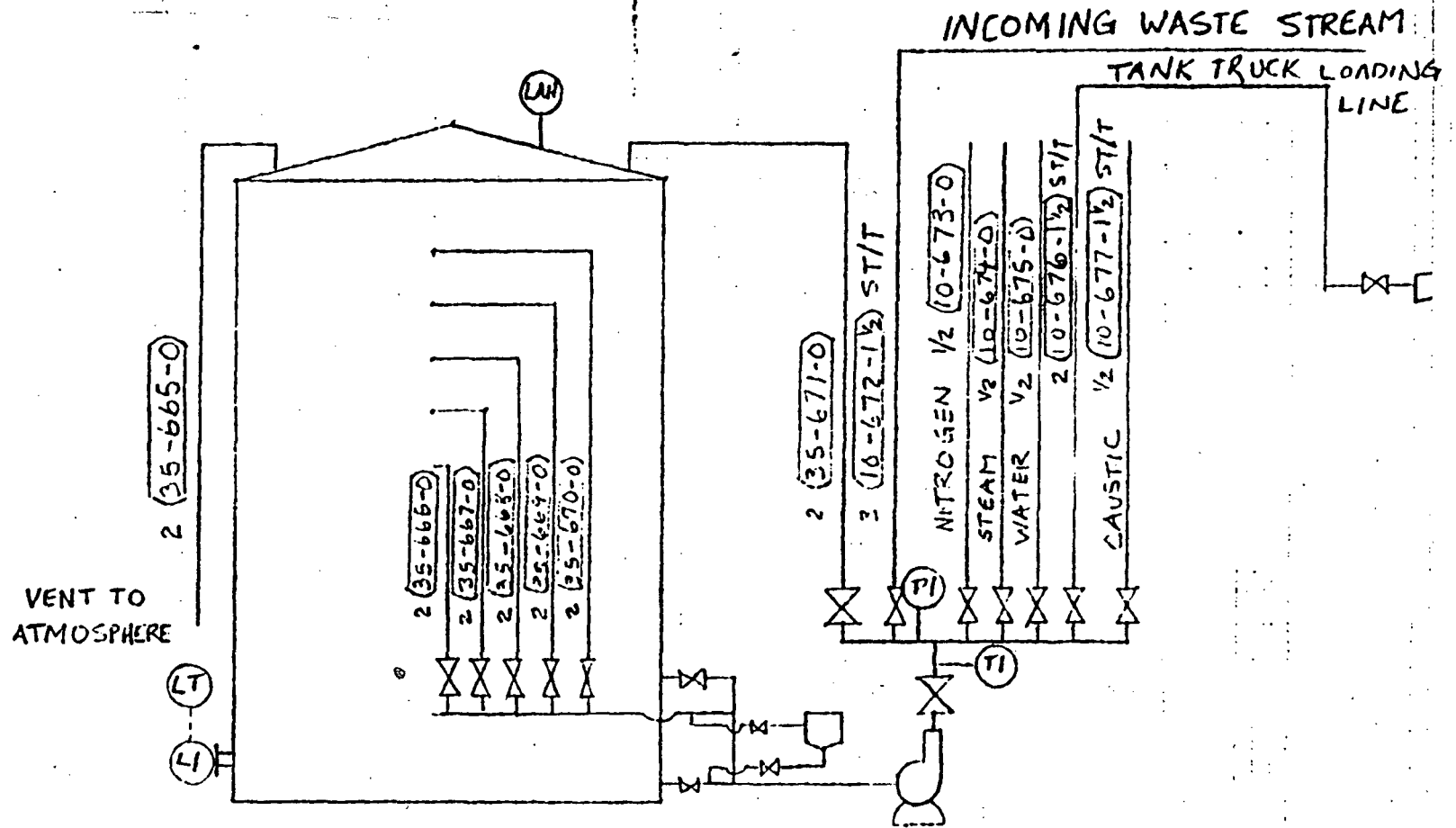
Visual inspections of the tank shell exterior are made weekly. The shell is examined for evidence of leaks or tears. Special attention is given to seams in the tank shell.

High level alarms are inspected semi-annually.

FGH/dt
FGH02

*When constructed.

ATTACHMENT VIII CA-1 PIPING AND INSTRUMENTATION DIAGRAM



BY _____
CHKD. BY _____ DATE _____

JOB NO. _____

ATTACHMENT VIII
CONT.

1. CA-1 Dimensions

Diameter 12 ft.
Height 25 ft. 3 in.

2. CA-1 Wall Thickness - 0.375 in. (When Constructed)

3. Tank, piping, and valves materials of construction.

Tank and tank piping - Derkane 470
Process piping - Carbon Steel
Tank valving - Carbon Steel
Process valving - Carbon Steel

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Rating/Schedule</u>
35-665-0	2	150 PSI
35-666-0	2	150 PSI
35-667-0	2	150 PSI
35-668-0	2	150 PSI
35-669-0	2	150 PSI
35-670-0	2	150 PSI
35-671-0	2	150 PSI
10-672-1-1/2 ST/T	3	40
10-673-0	1/2	40
10-674-1-1/2 IPP	1/2	40
10-675-0	1/2	40
10-676-1-1/2 ST/T	2	40
10-677-1-1/2 ST/T	1/2	40

Tank Designation: J-42

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM-615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank shell is 0.375"* thick and rests on the tank foundation pad.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank floor.

The liquid contained in the tank has a typical specific gravity of 1.2. Attachment 3 shows piping, instrumentation, and flows associated with tank J-42.

2. Compatibility and Material of Construction Properties

Based on literature supplied by Dow Chemical on the Derakane Vinyl Ester Resins, Derakane 470 has a maximum recommended service temperature of 210°F for sodium sulfite solutions. This maximum service temperature was determined by field or laboratory testing in accordance with ASTM C581-68. Since this tank is maintained at ambient temperatures, the hazardous waste managed in the tank is compatible with the material of construction.

Derakane 470-36 Resin Properties

Monomeric Styrene	36%
Tensile Strength	10-11, 000 PSI
Tensile Modulus	5.1×10^{-5} PSI
Elongation	3.0%
Flexural Strength	18-20,000 PSI
Flexural Modulus	5.5×10^{-5} PSI
Heat Distortion Temperature	295-305°F
Barcol Hardness	40

3. Overfill and Spill Control

The tank is equipped with a high level alarm that activates an audible alarm which can be heard in the process area. When the alarm sounds, an investigation is made and the flow of material to the tank is shut off, if necessary. Operating procedures have been established whereby 75%

or the tank volume is not exceeded. The tank level is gauged twice a day.

Tank J-42 is surrounded by a 4 1/2 foot high concrete retaining wall. Valves that drain the diked area are kept closed at all times. Any spilled material will be vacuumed up and placed in J-42, CA-1 or disposed of off-site. See attached blue print for diked area dimensions and specifications.

4. Special Requirement for Ignitable or Reactive Wastes

No ignitable or reactive wastes are placed in tank J-42.

5. Tank Inspection Procedures

The tank is equipped with a manometer which is used to measure the liquid level in the tank twice a day.

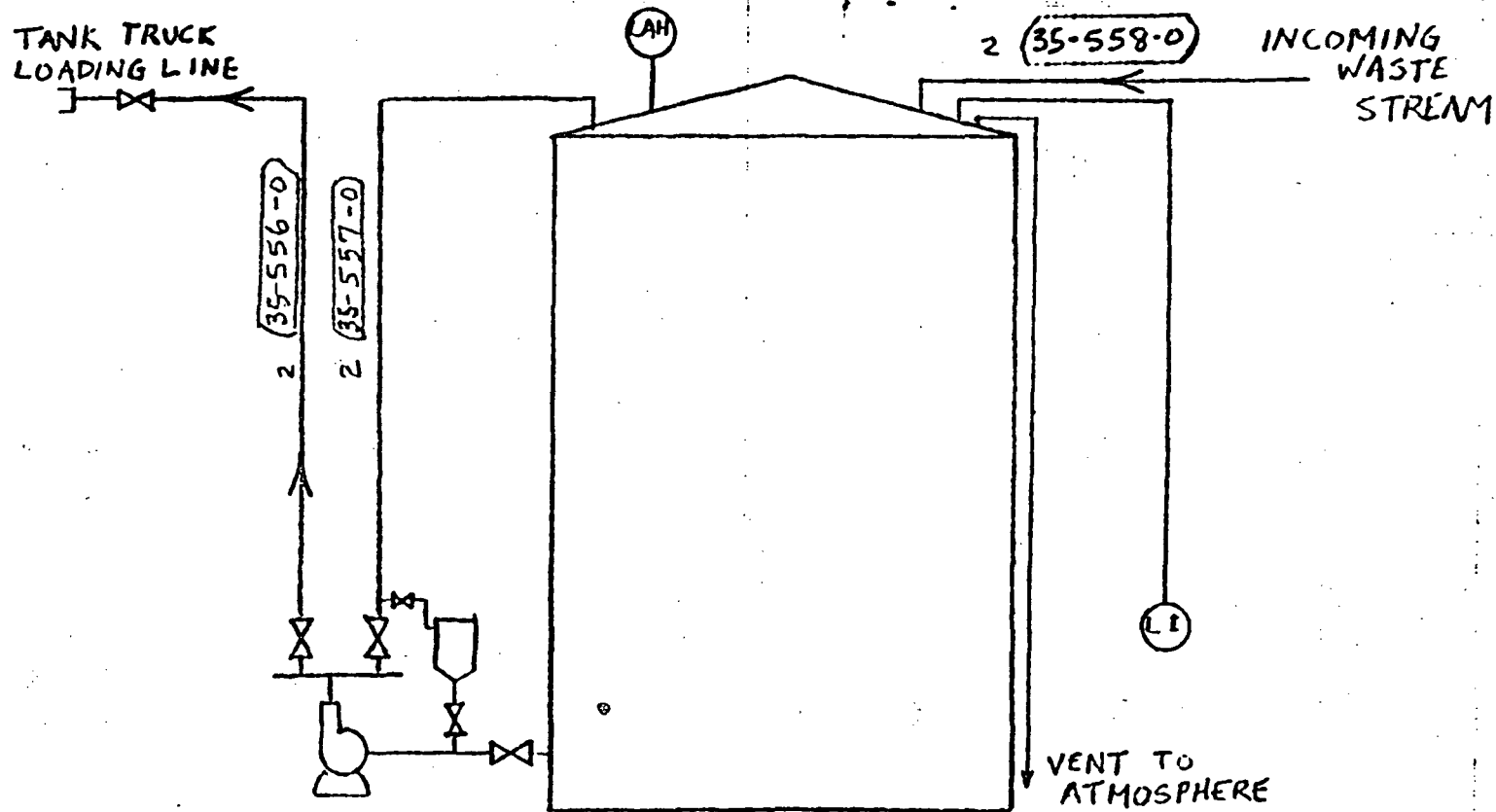
Visual inspections of the tank shell exterior area are made weekly. The shell is examined for evidence of leaks or tears. Special attention is given to seams in the tank shell.

High level alarms are inspected semi-annually.

FGH/dt
FGH03

*When constructed.

ATTACHMENT IX
J-42 PIPING AND INSTRUMENTATION DIAGRAM



CHKD. BY _____ DATE _____

JOB NO. _____

ATTACHMENT IX
CONT.

1. J-42 Dimensions

Diameter 10 ft.

Height 17 ft.

2. J-42 Wall Thickness - 0.375 in. (When constructed)

3. Tank, piping, and valves materials of construction.

Tank and piping - Derkane 470

Valves - Glass-lined

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Rating</u>
2(35-556-0)	2 in.	150 PSI
2(35-557-0)	2 in.	150 PSI
2(35-558-0)	2 in.	150 PSI

Tank Designation: B-32

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM - 615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank shell is 0.385" thick and rests on the tank foundation pad.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank roof.

The liquid contained in the tank has a typical specific gravity of 0.9. Attachment 2 shows piping, instrumentation, and flows associated with tank B-32.

2. Compatibility and Material of Construction Properties

See metallurgical consultant tank design report. Attachment 13.

3. Overfill and Spill Control

The tank is equipped with a manometer which is used to measure the amount of liquid in the tank. Operating procedures have been established whereby 75% of the tank volume is not exceeded. The tank level is gauged twice a day.

If a tank leak or rupture would develop, material would flow into the process drain with an ultimate destination of the #1 lift station. From the #1 lift station, the material would be pumped to E-1 or E-2. E-1 and E-2 are two 110,160 gallon carbon steel tanks which can be used in an immediate response to a spill.

4. Special Requirements for Reactive Waste

No reactive wastes are placed in tank B-32.

5. Special Requirements for Ignitable Wastes

Materials stored in tank B-32 are ignitable having a flash point of less than 140°F.

Following are procedures used to add:

- A. The ignitable waste is pumped to the tank from vacuum trucks that collect miscellaneous organic materials from the process and laboratory collection areas.

- B. The addition of the waste causes no reaction or generation of heat, toxic mists, fumes or gases in sufficient quantities to threaten human health or the environment.
- C. The ignitable waste is stored in tank B-32 in such a way that it is protected from conditions which may cause the waste to ignite. The area where B-32 is located is a no smoking area. A "hot work" permit system is used at the plant to ensure that no ignition sources are heated that may ignite the waste.

6. Tank Inspection Procedures

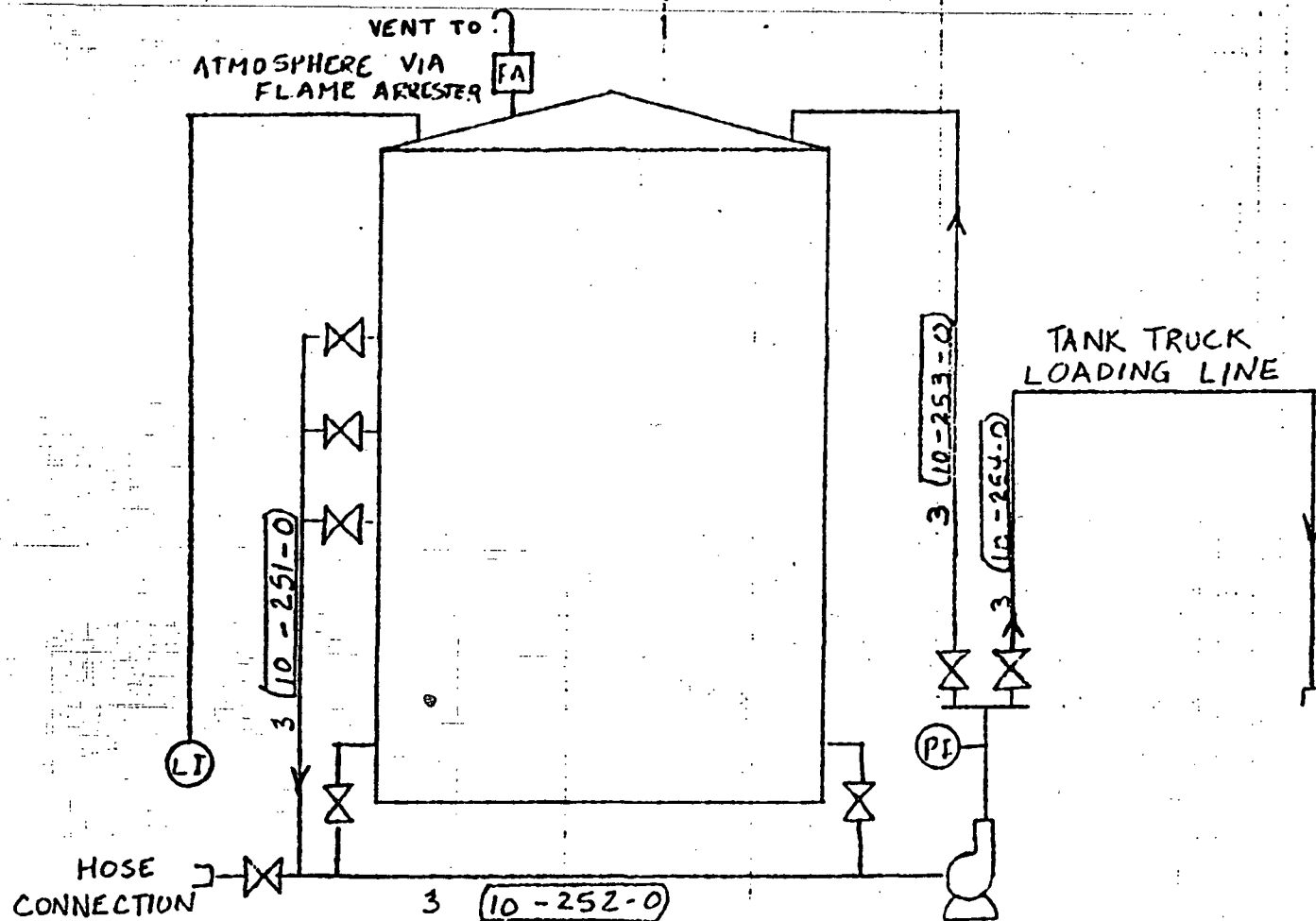
The tank is equipped with a manometer which is used to measure the liquid level in the tank twice a day.

Visual inspections of the tank shell exterior are made weekly. The shell is examined for evidence of corrosion or leaks. Special attention is given to seams in the tank shell.

The tank shell thickness is ultrasonically checked annually by use of a metallurgical consultant.

FGH/dt
FGHB32

ATTACHMENT X
B-32 PIPING AND INSTRUMENTATION DIAGRAM



ATTACHMENT ~~X~~
CONT.

1. B-32 Dimensions

Diameter 10 ft.
Height 25 ft.

2. B-32 Wall Thickness - .385 in.

3. Tank, piping and valves materials of construction - Carbon Steel

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Rating/Schedule</u>
3(10-251-0)	3 in.	40
3(10-252-0)	3 in.	40
3(10-253-0)	3 in.	40
3(10-254-0)	3 in.	40

EDWARD L. HAILE AND ASSOCIATES, INC.

Chemistry - Metallurgy - Corrosion - NDT



9934 SWEETWATER
P. O. BOX 38523
HOUSTON, TEXAS 77231
TELEPHONE: 713 - 448-9725

Evaluation of
Waste Solvents Storage Tank
B-32

for

Mr. Frank G. Hejtmanek
RCRA Coordinator
Lubrizol Corporation
P.O. Box 158
Deer Park, Texas 77536

Job No: 840546
Date: July 10, 1984

by

EDWARD L. HAILE AND ASSOCIATES, INC.

William J. Arnold III. Ph.D. P.E.
President

WJA/mlb

Description:

The tank presently under evaluation is referred to as tank B-32 at the Lubrizol Corporation, Deer Park Plant. The tank is a four course, double riveted lap joint construction ("L2") with a conical roof and bottom and a 2' skirt. (See photo). The tank is presently in use as a storage vessel for waste hydrocarbon solvents.

The dimensions of the tank are as follows.

Inside diameter	10 feet
Height	25'
Capacity: Total	15076 gal.
bottom cone	38 gal.
per inch	48.96 gal.

Visual Examination and Thickness Survey:

The tank is presently on a concrete foundation. There was observed no seepage from any of the seams, bottom, rivets or nozzle gaskets. The foundation was intact with no noticable cracking.

The rivets are on 2½" centers. The rivet diameter was not able to be measured nor was it known, but is estimated to be ¾" from the size of the heads.

A thickness survey of the tank plate indicated it to be a nominal 3/8" averaging 0.377" with the thinnest thickness being 0.365". There was found no exception-ally thin, corroded or pitted areas.

Design and Strength Characteristics:

A sample of the tank plate large enough for mechanical testing and chemical analysis was not able to be removed from the tank. Consequently, it was decided to make all calculations based on the assumption that the tank is made of material with the least structural properties. Material in this class would be, for example, ASTM A283 Grade A plate with the following properties.

Yield Strength	> 24,000 psi
Tensile Strength	45,000 - 55,000 psi
Elongation	> 30%
Reduction of Area	- - - - -

Assuming the tank is filled with water at ambient temperature, the following forces pertain.

Gage pressure at bottom	10 psi
Max Fiber Stress in plate	1643 psi
Max Load on vertical seam	616 lbs/inch

(cont'd)

Corrosion Rate:

It was reported that there is always a mixture of various hydrocarbon solvents in the tank. Although, in general, solvents are relatively non corrosive to mild steel, the halogenated hydrocarbon solvents, for example Carbon Tetrachloride and hexachlorobenzene can have corrosion rates as high as 0.050" per year in the presence of moisture which hydrolyzes these solvents. However, assuming that these type solvents will not likely occur in high concentrations, a more reasonable predicted corrosion rate would be in the range of 0.002" → 0.015" per year. At this rate, it will take approximately 15-18 years to diminish the wall to the minimum allowable thickness of 3/16".

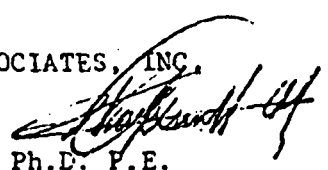
Conclusion - Discussion:

The tank presently appears to be in excellent condition and overly designed and appropriate for the present application. The plate has full wall thickness and the number of rivets is at the upper specified limit (2.25" min. center to center distance). Working loads under a full head compared to material capacity can be summarized as follows.

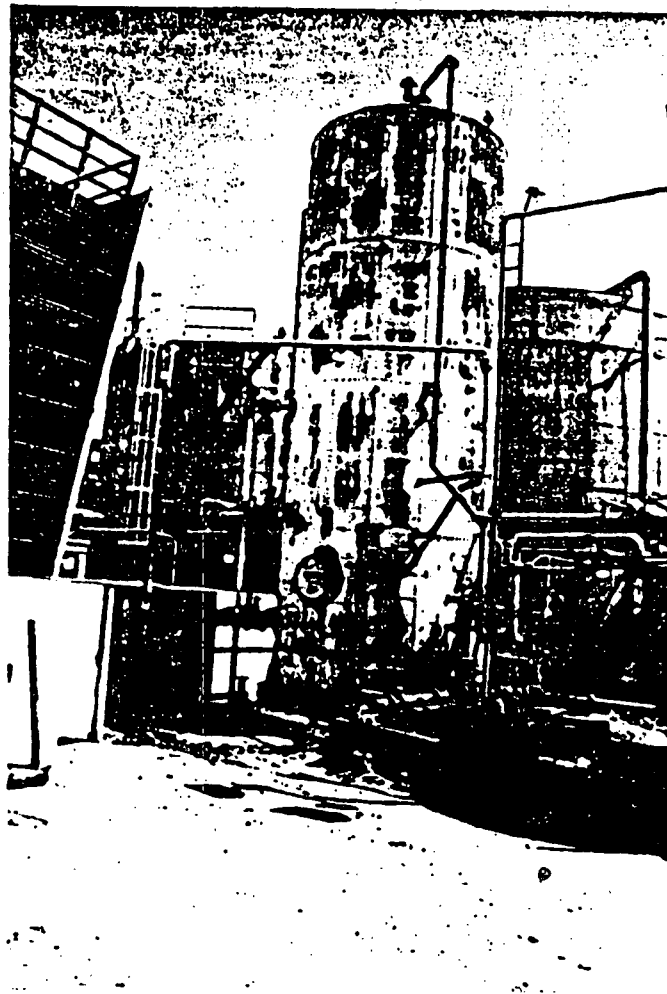
Property	Maximum Actual Loads	Material Capacity	Safety Factor
Tensile	1643 psi	24,000 min (yield)	14.6/1
Vertical Seam Load	661 lbs/in.	6362 lbs/in for "L2" design	10.3/1
Corrosion Rate	0.010" per yr. (est)		

The tank is presently not leaking or seeping and from estimated corrosion rates should not give trouble for a number of years. Yearly inspection for wall thickness is recommended as a monitor to any unforeseen accelerated corrosion.

EDWARD L. HAILE AND ASSOCIATES, INC.

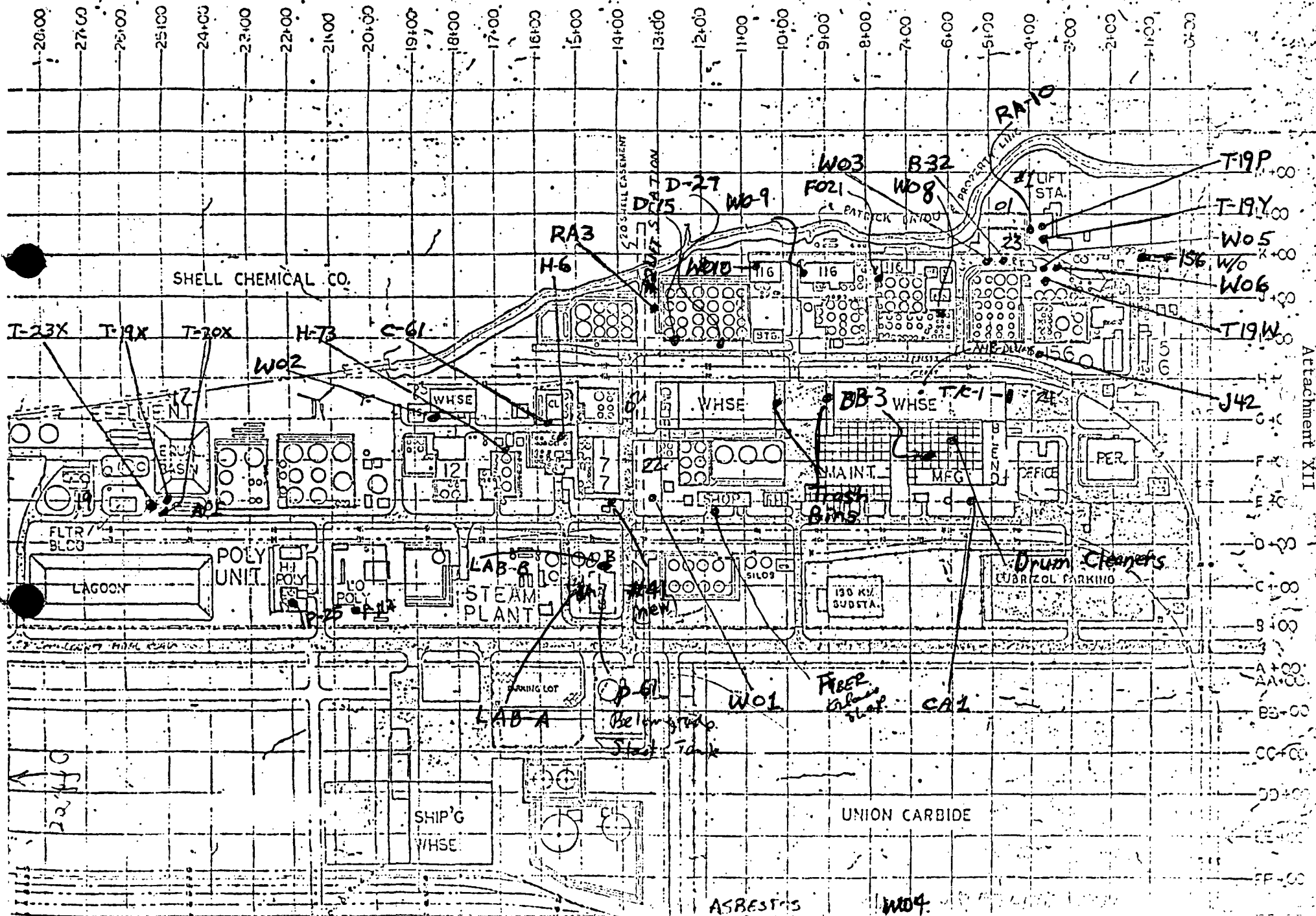

William J. Arnoult III. Ph.D. P.E.
President

Enclosure
WJA/mlb



Tank B-32

P-25 API Sludge
D-15
D-27



Attachment XII

Harriet
TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director

III A
J. D. Head, General Counsel
Michael E. Field, Chief Examiner
Karen A. Phillips, Chief Clerk

August 31, 1988

RECEIVED

SEP 2 PM 12:44

EPA REGION VI
HAZARDOUS WASTE
COMPLIANCE BRANCH

Sam Becker, Chief
Hazardous Waste Compliance Branch (6H-C)
U. S. Environmental Protection Agency
Region VI
1445 Ross Avenue, Suite 1200
Dallas, Texas 75202

Re: **Lubrizol Corporation - Deer Park**
Industrial Solid Waste Registration Number 30324
EPA Identification Number TXD041067638

Dear Mr. Becker:

Enclosed is a Texas Water Commission (TWC) land disposal restriction checklist which identifies potential violations alleged during a TWC Compliance Evaluation Inspection (CEI) performed on April 29, 1988. The TWC Enforcement Screening Committee reviewed the CEI on August 24, 1988 and will pursue all other RCRA violations for enforcement.

The TWC is providing this information to assist the Region in its efforts to enforce the land disposal regulations.

If you have any additional questions, please contact me at (512) 463-7925.

Sincerely,

Ken A. Zarker
Ken A. Zarker, Head
Reports and Information Management Unit
Hazardous and Solid Waste Division

KAZ:am

Enclosure

cc: **Texas Water Commission Southeast Region - Deer Park Office**
Susan Ferguson, Assistant Chief, Enforcement Section,
Hazardous and Solid Waste Division, Texas Water Commission

C.O. Use Only

SOLID WASTE INSPECTION REPORT
For RCRA Permitted Facilities

HW Permit: 50077-000

Issued: 2/16/88

0888 ~~GAS~~ JUN 27 1988

INSPECTION COVERSHEET

TWC District 7

EPA ID No. TXDC041067638 Commercial Waste Facility Govt. Facility

NAME OF PERMITTEE Lubrizol Corporation - Deer Park Plant

MAILING ADDRESS P.O. Box 158, Deer Park, TX 77536 Tel.

SITE LOCATION 41 Tidal Road, Deer Park, TX 77536 Tel. (713) 479-2851

COUNTY Harris TYPE OF INDUSTRY Manufactures performance additives
for lube oils, greases and fuels.

OPERATIONAL STATUS: Active

CURRENT WASTE MANAGEMENT (Haz. - "H"; Class I Nonhaz. - "NH"; Class II - "II"; Class III - "III")

Generate H, NH, II Treat NH, H Store H, NH, II Dispose

Transport

(Wastewater treatment)
NPDES

HW Permitted Facilities: (circle) C (T) SI WP LT LF I TT TR O

HW Interim-Status Facilities: C T SI WP LT LF I TT TR O

HW Permit-Exempt Facilities: (C) (T)

Non-Hazardous Waste Facilities: (C) (T) (SI) WP LT LF I TT TR O

TYPE OF INSPECTION: (circle) CEI GW CL CD SA FO OT

Inspector's Name and Title Mac Vilas - Field Investigator

Inspection Participants Julius Rexer, Clark Hopper

Date(s) of Inspection April 29, 1988

Signed: Mac Vilas 5/27/88
Inspector DateApproved: W. Kanewer 6/17/88
District ManagerRECEIVED
JUN 23 1988

FIELD OFFICE

**F-Solvent LAND DISPOSAL RESTRICTION
GENERATOR CHECKLIST**

A. F-SOLVENT IDENTIFICATION

1. Does the handler generate the following hazardous wastes?

- a. F001
- b. F002
- c. F003

YES ☐ NO ☒
YES ☐ NO ☒
YES ☐ NO ☒

If an F003 wastestream listed solely for ignitability has been mixed with a nonrestricted solid or hazardous waste, does the resultant mixture exhibit the ignitability characteristic?

YES ☐ NO ☒

- d. F004
- e. F005

YES ☐ NO ☒
YES ☒ NO ☐

2. Source of the above information: EPA Form 8700 ☐; Part A ☐; Part B ☒;
Other(specify): Notice of Registration

NOTE: Appendix A is useful in determining whether the facility is generating F-solvent wastes, if such wastes were not identified by the facility previously. If you are concerned that F-solvent wastes may be misclassified or mislabeled, turn to Appendix A. Note concerns below:

None

B. BDAT* TREATABILITY GROUP - TREATMENT STANDARDS IDENTIFICATION

1. Did generator correctly determine the appropriate treatability group (40CFR Part 268.41) of the waste?

YES ☒ NO ☐

C. WASTE ANALYSIS

1. Did the generator determine whether the waste exceeds treatment standards based on 40CFR Part 268.7(a)?

YES ☒ NO ☐

Check the method used for determination:

- ☒ a. Knowledge of wastes
- ☐ b. TCLP** Analysis
- ☐ c. Other (specify) _____

If determined by TCLP, provide: date of last test, frequency of testing, and attach test results.

Dates/frequency: _____

* Best Demonstrated Available Treatment

** Toxicity Characteristic Leaching Procedure

2. Did the F-solvent wastes exceed applicable treatability group standards upon generation? [Section 268.7(a)(2)]

YES ☒ NO ☐

3. Did the generator **dilute** the waste or the treatment residual so as to substitute for adequate treatment? [Section 268.3]

YES ☐ NO ☒

- F005 Waste is mixed with a D001 Waste, in tank W06 ...

D. MANAGEMENT

1. Onsite Management:

- a. Are F-solvent wastes treated, stored or disposed of onsite? YES ☒ NO ☐

If yes, complete Land Restriction T/S/D Checklist; If no, answer #2.

- b. Are test results maintained in the operating record? YES ☐ NO ☒

F005, by process knowledge.

2. Offsite Management:

- a. If F-solvent wastes exceed treatment standards, did generator provide the treatment facility with: [268.7(a)(1)]

- | | | |
|--|------------------------------|--|
| (1) EPA number? | YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| (2) Applicable treatment standard? | YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| (3) Manifest number? | YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |
| (4) Waste analysis data, if available? | YES <input type="checkbox"/> | NO <input checked="" type="checkbox"/> |

Identify off-site treatment facilities: Hansbrough Energy System
Crowley, Louisiana

- b. If F-solvent wastes do not exceed treatment standards, did generator provide the disposal facility with: [268.7(a)(2)]

- | | | | |
|--|-----|------------------------------|-----------------------------|
| (1) EPA Hazardous Waste number? | N/A | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| (2) Applicable treatment standard? | | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| (3) Manifest number? | | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| (4) Waste analysis data, if available? | | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| (5) Certification regarding waste and that it meets treatment standards? | | YES <input type="checkbox"/> | NO <input type="checkbox"/> |

Identify Land Disposal facilities receiving BDAT certified wastes:

- c. If waste is subject to **nationwide variance** (e.g., solvent-water mixtures less than 1%), case-by-case **extension** (268.5) or a **petition** (268.6) does generator provide notice to disposer that waste is exempt from land disposal restrictions [268.7(a)(3)]?

N/A YES ☐ NO ☒

E. STORAGE OF F-SOLVENT WASTE

1. Was F-solvent waste stored for greater than 90 days (after variance 180/270 days for SQG)?

YES ☒ NO ☐

If yes, was facility operating as a TSD under RCRA interim-status or final permit?

YES ☒ NO ☐

F. TREATMENT USING RCRA 264/265 EXEMPT UNITS OR PROCESSES

(i.e., boilers, furnaces, distillation units, w.w. treatment tanks, etc.)

1. Were treatment residuals generated from RCRA 264/265 exempt units or processes?

N/A YES ☐ NO ☒

If yes, list type of treatment unit and processes: _____

NOTE: If the residuals from a RCRA-exempt treatment unit are above the treatment standards, the owner/operator is considered a generator of restricted waste. The inspector should determine whether the generator requirements, particularly waste identification requirements, have been met for the treatment residuals.

APPENDIX A

F-SOLVENT IDENTIFICATION CHECKLIST

Does the handler generate any of the following F001 constituents (i.e., spent halogenated solvents used in degreasing) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	YES _____	NO <input checked="" type="checkbox"/>
trichloroethylene	YES _____	NO <input checked="" type="checkbox"/>
methylene chloride	YES _____	NO <input checked="" type="checkbox"/>
1,1,1-trichloroethane	YES _____	NO <input checked="" type="checkbox"/>
carbon tetrachloride	YES _____	NO <input checked="" type="checkbox"/>
chlorinated fluorocarbons	YES _____	NO <input checked="" type="checkbox"/>

2. Does the handler generate any of the following F002 constituents (i.e., spent halogenated solvents) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	YES _____	NO <input checked="" type="checkbox"/>
trichloroethylene	YES _____	NO <input checked="" type="checkbox"/>
methylene chloride	YES _____	NO <input checked="" type="checkbox"/>
1,1,1-trichloroethane	YES _____	NO <input checked="" type="checkbox"/>
chlorobenzene	YES _____	NO <input checked="" type="checkbox"/>
trichlorofluoromethane	YES _____	NO <input checked="" type="checkbox"/>
1,1,2-trichloro-1,2,2-trifluoroethane	YES _____	NO <input checked="" type="checkbox"/>
ortho-dichlorobenzene	YES _____	NO <input checked="" type="checkbox"/>
1,1,2-trichloroethane	YES _____	NO <input checked="" type="checkbox"/>

3. Does the handler generate any of the following F003 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

xylene	YES _____	NO <input checked="" type="checkbox"/>
acetone	YES _____	NO <input checked="" type="checkbox"/>
ethyl acetate	YES _____	NO <input checked="" type="checkbox"/>
ethyl benzene	YES _____	NO <input checked="" type="checkbox"/>
ethyl ether	YES _____	NO <input checked="" type="checkbox"/>
methyl isobutyl ketone	YES _____	NO <input checked="" type="checkbox"/>
n-butyl alcohol	YES _____	NO <input checked="" type="checkbox"/>
cyclohexane	YES _____	NO <input checked="" type="checkbox"/>
methanol	YES _____	NO <input checked="" type="checkbox"/>

If the F003 wastestream has been mixed with solid waste, does the resultant mixture exhibit the ignitability characteristic?

YES _____ NO ☒

4. Does the handler generate any of the following F004 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

cresols and cresylic acid	YES _____	NO <input checked="" type="checkbox"/>
nitrobenzene	YES _____	NO <input checked="" type="checkbox"/>

Does the handler generate any of the following F005 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

toluene
methyl ethyl ketone
carbon disulfide
isobutanol
pyridine
benzene
2-ethoxyethanol
2-nitropropane

YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
YES	<input checked="" type="checkbox"/>	NO	<input type="checkbox"/>
YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>
YES	<input type="checkbox"/>	NO	<input checked="" type="checkbox"/>

6. Are any of the constituents listed in the questions 1-5 used for their "solvent" properties -- that is to solubilize (dissolve) or mobilize other constituents? The following questions will be helpful in confirming this determination.

a. Chemical Carriers?
If yes, list the constituents.

YES ☐ NO ☒

b. Degreasing/Cleaning?
If yes, list the constituents.

YES ☒ NO ☐

Toluene, MEK

c. Diluents?
If yes, list the constituents.

YES ☐ NO ☒

d. Extractants?
If yes, list the constituents.

YES ☐ NO ☒

e. Fabric Scouring?
If yes, list the constituents.

YES ☐ NO ☒

f. Reaction and Synthesis Media?
If yes, list the constituents.

YES ☐ NO ☒

NOTE: If answers to questions 1-6 indicate that the waste may be an F-solvent, answer question 7.

7. Are any of the above constituents solvents? A solvent is considered "spent" when it has been used and is no longer used without being regenerated, reclaimed, or otherwise reprocessed. YES ☒ NO ☐

8. If the waste is a mixture of constituents as determined in questions 1-6, answer this to determine whether it is a "solvent mixture" covered by the listings.

If the wastestream is mixed and contains more than one of the F001-F005 constituents listed in questions 1-5 (by volume), give the concentration before use of all the constituents in the solvent mixture/blend.

For example:

5%	methylene chloride
2%	trichloroethylene
25%	1,1,1-trichloroethane
68%	mineral spirits
<u>100%</u>	

If the wastestream is a mixture containing a total of 10% or more (by volume) of one or more of the F001, F002, F004, or F005 listed constituents before use, it is a listed waste.

With respect to the F003 solvent wastes, if, before use, the wastestream is mixed and contains only F003 constituents, it is a listed waste.

For example:

33%	acetone
16%	methanol
51%	ethyl ether
<u>100%</u>	

If the wastestream is a mixture containing F003 constituents and a total of 10% or more of one or more of the F001, F002, F004, and F005 listed constituents before use, it is a listed waste. For example:

50%	xylene	F003
12%	TCE	F001
38%	mineral spirits	
<u>100%</u>		

If in light of the above, the handler appears to be generating F001-F005 hazardous wastes, refer this facility to the enforcement official for follow-up actions verifying the use of solvents at the facility.

(Spent equipment wash)
Lubricol generates an F005 waste according to the Waste Analysis Plan in the Part B and on the Registration (waste No. 010).

Please see attachments.

**F-Solvent LAND DISPOSAL RESTRICTION
TREATMENT/STORAGE/DISPOSAL FACILITIES CHECKLIST**

NOTE: The federal F-solvent land disposal restriction rules became effective on November 8, 1986. A two year variance to the effective date was granted all dioxin wastes and some solvent wastes.

A. GENERAL FACILITY STANDARDS

1. Was waste analysis plan revised to cover Part 268 requirements? YES ☒ NO ☐
(264.13 or 265.13)
2. Did the facility obtain representative chemical and physical analysis of wastes and residues? YES ☐ NO ☒
- a. Did testing include analyses for all F001-F005 constituents? YES ☐ NO ☒
- b. Were analysis performed using TCLP*? YES ☐ NO ☒
- c. Were analyses performed Onsite or Offsite? N/A ON ☐ OFF ☐
(identify offsite lab): _____
- d. Does the frequency of sampling appear adequate? YES ☐ NO ☐
- e. Do procedures used to identify manifest discrepancies appear adequate?
F Waste is generated and stored on-site. YES ☒ NO ☐
F waste is not received from off-site

B. STORAGE (268.50)

1. a. Does facility store restricted wastes exceeding treatment standards? YES ☒ NO ☐
If no, go to Section C.
- b. Are all containers clearly marked to identify content and date(s) entering storage? YES ☒ NO ☐
- c. Do operating records track the location, quantity, and dates that wastes exceeding treatment standards entered and were removed from storage? YES ☒ NO ☐
- d. Do operating records agree with container labeling? YES ☒ NO ☐
- e. Is waste exceeding treatment standards stored for less than one year? YES ☒ NO ☐
- (1). If yes, can you show that such accumulation is not necessary to facilitate proper recovery, treatment, or disposal? YES ☐ NO ☒
- (2). If yes, state how: _____

* Toxic Characteristic Leaching Procedure

f. Were tanks emptied at least once per year, and do operating records show that volume of waste removed from tanks annually at least equals tank volume?

YES ☒ NO ☐

g. Was/is waste exceeding treatment standards stored for more than one year?

YES ☐ NO ☒

If yes, state the owner/operator's proof that such storage was solely for the purposes of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal:

h. Are F-solvent wastes exceeding treatment standards "stored" (not treated) in surface impoundments?

YES ☐ NO ☒

C. TREATMENT IN SURFACE IMPOUNDMENTS (268.4)

1. Were F001-F005 wastes exceeding treatment standards placed in surface impoundments for treatment?

YES ☐ NO ☒

If no, go to Section D.

2. Did the facility submit a certification of compliance with minimum technology and groundwater monitoring requirements, and the waste analysis plan to the EPA?

N/A
YES ☐ NO ☐

3. Have the minimum technology requirements been met?

YES ☐ NO ☐

a. If the minimum technology requirements have not been met, has a **waiver** been granted for that unit(s)?

YES ☐ NO ☐

4. Have the RCRA groundwater monitoring requirements been met? (CFR 265 Subpart F)

YES ☐ NO ☐

5. Have representative samples of sludge and supernatant from the surface impoundment been tested separately, acceptably, and in accordance with the sampling frequency and analysis specified in the waste analysis plan and are the results in the operating record?

YES ☐ NO ☐

6. Did the hazardous waste residue (sludge or liquid) exceed the treatment standards specified in 268.41?

YES ☐ NO ☐

7. Provide the frequency of analyses conducted on treatment residues:

8. Does the operating record adequately document the results of waste analyses performed in accordance with 268.41?

YES ☐ NO ☐

9. Have the hazardous waste residues that exceed the treatment standards (268.41) been removed adequately and annually? N/A ☒ YES ☐ NO
- a. If answer to question #6 is no, and the supernatant is determined to exceed treatment concentrations, is annual throughput greater than the impoundment volume? YES ☐ NO ☐
10. If residues were removed annually, were adequate precautions taken to protect liners and do records indicate that inspections of liner integrity are performed? YES ☐ NO ☐
11. When removed, were solvent wastes managed subsequently in another surface impoundment? NO ☐ YES ☐
12. When removed, were wastes treated prior to disposal? YES ☐ NO ☐
- a. If yes, are waste residues treated onsite or offsite? N/A ☒ ON ☐ OFF ☐
- b. Identify management method: _____

D. TREATMENT

1. Did the facility operate treatment facilities for F-solvent waste (not including surface impoundments)? YES ☐ NO ☒
- If no, go to Section E.
2. Describe the treatment process for F-solvent wastes: _____
3. Does the facility, in accordance with an acceptable waste analysis plan, verify that the residue extract from all treatment processes for the F-solvent wastes are less than treatment standards? [268.7(b)(2)] N/A YES ☐ NO ☐
4. Describe frequency of testing of treatment residuals: _____
5. Was dilution used as a substitute for treatment? NO ☐ YES ☐
6. Are certifications and results of waste analyses kept in the operating record? YES ☐ NO ☐
7. Is notice (with waste no., treatment standard, manifest no., and analytical data, where available) submitted for each shipment of waste or treatment residual? [268.7(b)] YES ☐ NO ☐

Are certifications that wastes meet treatment standards submitted for each shipment? [268.7(b)(2)(1)]

N/A YES ___ NO ✓

2. LAND DISPOSAL

1. Were F-solvent wastes placed in Land Disposal Units? [i.e., landfills, surface impoundments (do not include if in Section C), wastepiles, wells, land treatment units, salt domes/beds, mines/caves, concrete vaults, or bunkers] YES ___ NO ✓
2. Did facility have the notice and certification from generators/treaters in its operating record? [268.7(c); 268.7(a), (b)] N/A YES ___ NO ___
3. Did the facility obtain waste analysis data through testing of the waste to determine that the wastes are in compliance with the applicable treatment standards? [268.7(c)] YES ___ NO ___
4. Were F-solvent wastes exceeding the treatment standards placed in land disposal units [268.30], excluding national capacity variances [268.30(a)]?
 - a. If yes, did facility have an approved waiver based on: a no-migration petition [268.6] or an approved case-by-case capacity extension [268.5] or a variance [268.44]? YES ___ NO ___
5. Were F-solvent wastes disposed of which were subject to a national or case-by-case capacity variance/extension?
 - a. If yes, were these wastes disposed of in a facility that has a new, replacement, or laterally expanded landfill or impoundment? YES ___ NO ___
 - b. If (a.) is yes, have the minimum technology requirements been met for all such units at the facility? YES ___ NO ___
6. Were adequate records of disposal maintained? YES ___ NO ___
7. If wastes subject to a nationwide variance, case-by-case extensions [268.5], or no-migration petitions [268.6] were disposed, does facility have notices [268.7(a)(3)] and records of disposal? YES ___ NO ___
8. What is the volume of F-solvent waste disposed to date by waste? _____

9. If the facility has a case-by-case extension, can the inspector verify that the facility is making progress as described in progress reports? YES ___ NO ___

Appendix B

TREATMENT STANDARDS FOR F-SOLVENTS

<u>F001-F005 SPENT SOLVENTS</u>	<u>CONCENTRATION (mg/l)</u>	
	<u>Wastewaters</u>	<u>Other Wastes</u>
Acetone	0.05	0.59
N-butyl alcohol	5.0	5.0
Carbon disulfide	1.05	4.81
Carbon tetrachloride	0.05	0.96
Chlorobenzene	0.15	0.05
Cresols (cresylic acid)	2.82	0.75
Cyclohexanone	0.125	0.75
1,2-dichlorobenzene	0.65	0.125
Ethyl acetate	0.05	0.75
Ethyl benzene	0.05	0.053
Ethyl ether	0.05	0.75
Isobutanol	5.0	5.0
Methanol	0.25	0.75
Methylene chloride	0.20	0.96
Methylene chloride (from pharmaceutical industry)	12.7	0.96
Methyl ethyl ketone	0.05	0.75
Methyl isobutyl ketone	0.05	0.33
Nitrobenzene	0.66	0.125
Pyridine	1.12	0.33
Tetrachloroethylene	0.079	0.05
Toluene	1.12	0.33
1,1,1-Trichloroethylene	1.12	0.41
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.05	0.96
Trichloroethylene	0.062	0.091
Trichlorofluoromethane	0.05	0.96
Xylene	0.05	0.15

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD

WICKLIFFE - OHIO - 44092

TXD 04106 7638
HAZSIT 00876

Item VI: Photographs

Attachment 1



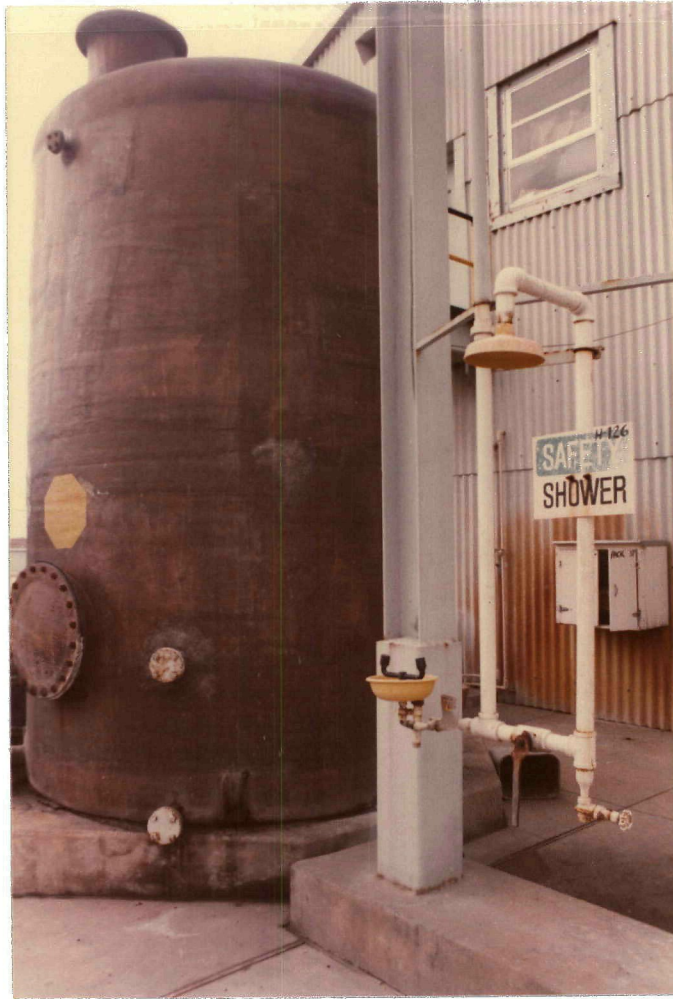
WASTE OIL TANK

8-1-80



WASTE OIL TANK

8-1-80



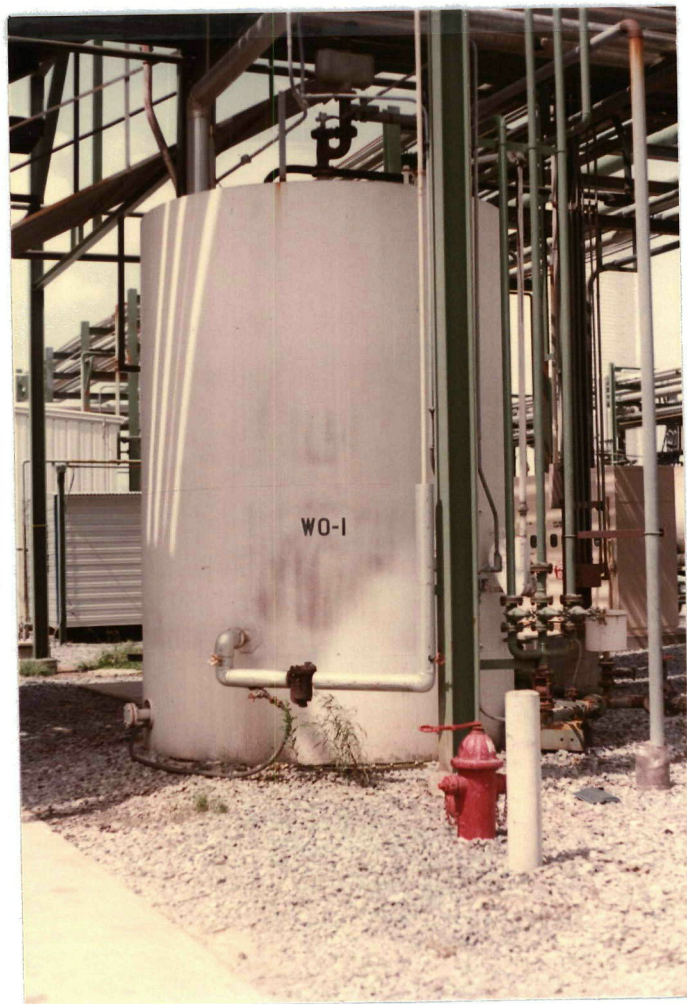
WASTE OIL TANK

8-1-80



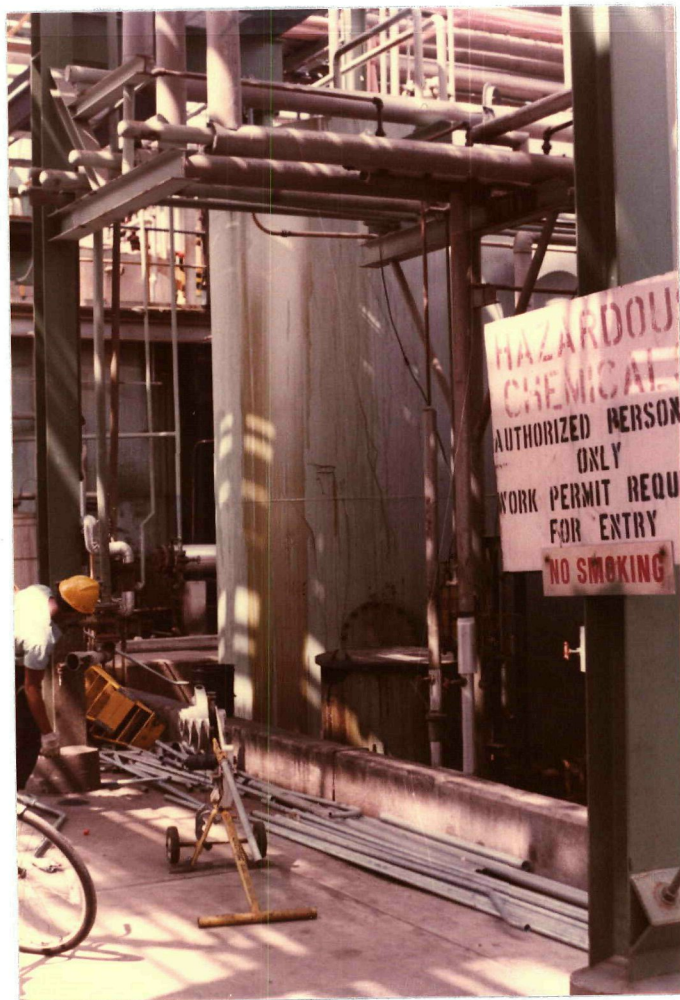
WASTE OIL TANK

8-1-80



WASTE OIL TANK

8-1-80



WASTE OIL TANK

8-1-80



WASTE LIQUID
STORAGE TANK

8-1-80



WASTE OIL TANK

8-1-80



WASTE OIL
TANK

8-1-80



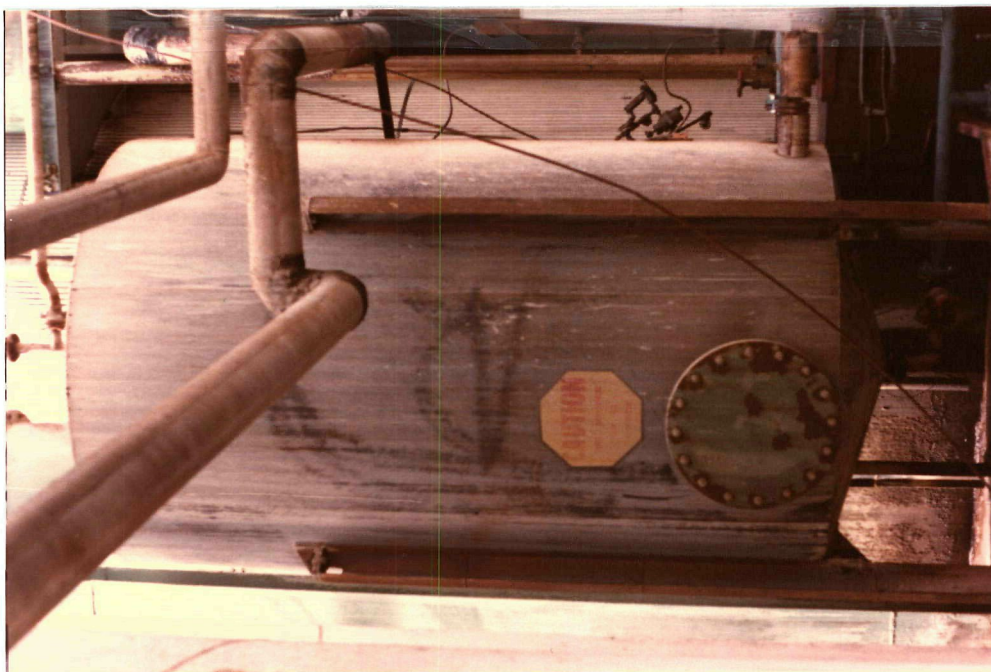
WASTE OIL TANK

8-1-80



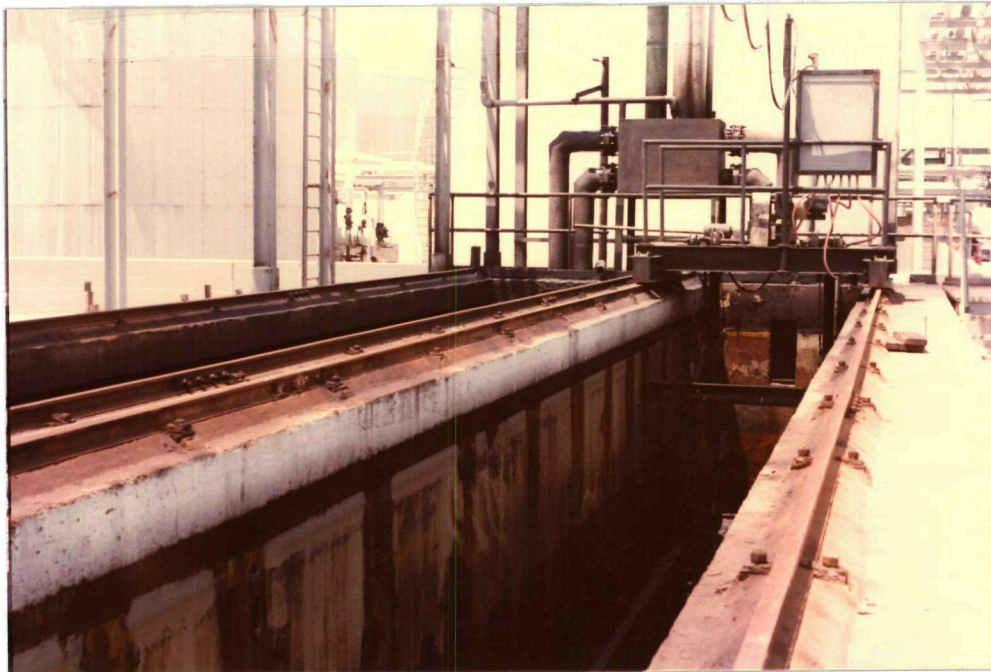
API SEPARATOR

8-1-80



WASTE OIL TANK

8-1-80



API

SEPARATOR

8-1-80



FINE NEUTRALIZATION
TANK

8-1-80



COARSE NEUTRALIZATION
TANK

8-1-80



WASTE OIL
TANK

8-1-80



WASTE OIL TANKS
(2)

8-1-80



EQUALIZATION BASIN

8-1-80



WASTE LIQUID
STORAGE TANK

8-1-80



WASTE OIL TANK

8-1-80

File #

EPA

TEXAS WATER COMMISSION

TWC Reg.: 30324

C.O. Use Only

SOLID WASTE INSPECTION REPORT
For RCRA Permitted Facilities

HW Permit: 50077-000

088Y

JUN 27 1988
SEP 23 1988

Issued: 2/16/88

INSPECTION COVERSHEET

TWC District 7

EPA ID No. TXDC41067638

Commercial Waste Facility

Govt. Facility

NAME OF PERMITTEE Lubrizol Corporation - Deer Park Plant

MAILING ADDRESS P.O. Box 158, Deer Park TX 77536 Tel.

SITE LOCATION 41 Tidal Road Deer Park TX 77536 Tel. (713) 479-2851

COUNTY Harris

TYPE OF INDUSTRY Manufactures performance additives
for lube oils, greases and fuels.

OPERATIONAL STATUS: Active

CURRENT WASTE MANAGEMENT (Haz.-"H"; Class I Nonhaz.-"NH"; Class II-"II"; Class III-"III")

Generate H, NH, II

Treat NH, H

Store H, NH, II

Dispose

Transport

(Wastewater treatment)
NPDES

HW Permitted Facilities:(circle) C (T) SI WP LT LF I TT TR O

HW Interim-Status Facilities: C T SI WP LT LF I TT TR O

HW Permit-Exempt Facilities: (C) (T)

Non-Hazardous Waste Facilities: (C) (T) (SI) WP LT LF I TT TR O

TYPE OF INSPECTION:(circle) CEI GW CL CD SA FO OT

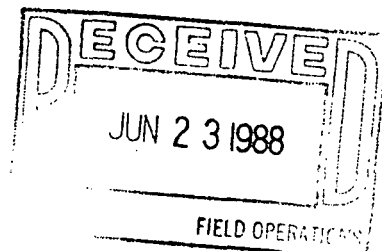
Inspector's Name and Title Mac Vilas - Field Investigator

Inspection Participants Julius Rexer, Clark Hopper

Date(s) of Inspection April 29, 1988

Signed: Mac Vilas 5/27/88
Inspector Date

Approved: W. Kanewer 6/17/88
District Manager



TWC SW INSPECTION REPORT
For RCRA Permitted Facilities
CONTENTS SHEET

TWC Reg. 30324

HW Permit 50011-000

- ☒ 1. Data Entry Form 0814
- ☒ 2. Inspection Coversheet
- ☒ 3. Permit Compliance Checklist
- ☒ 4. Facility Standards Checklist
- ☒ 5. Generators Checklist

6. Permitted Units Checklists

7. Non-Permitted Units Checklists

- ☐ Containers (C)
- ☒ Tanks (T)
- ☒ * Surface Impoundments (SI)
- ☐ Waste Piles (WP)
- ☐ Land Treatment (LT)
- ☐ Landfills (LF)
- ☐ Incinerators (I)
- ☐ Other (O)

- ☐ Containers (C)
- ☒ Tanks (T)
- ☐ Surface Impoundments (SI)
- ☐ Waste Piles (WP)
- ☐ Land Treatment (LT)
- ☐ Landfills (LF)
- ☐ Incinerators (I)
- ☐ Thermal Treatment (TT)
- ☐ Chem, Phy, Biol. Treatment (TR)
- ☐ Other (O)
(Satellite accumulation area)

(CP-50077) * Compliance Plan for two surface
impoundments
① Equalization Basin
② Number 1 Lift Station

☒ MV 8. Permit Compliance Plan Review Sheet

☒ 9. Closure/Post Closure Checklist

☒ 10. Closure-In-Progress Checklist

11. F-Solvent Land Disposal Restrictions

- ☒ a. Generator Checklist w/Appendix A
- ☒ b. T/S/D Facilities Checklist w/Appendix B

☒ 12. TWC Registration

☒ 13. Maps, Plans, Sketches

☐ 14. Photographs

☐ 15. Sample Analysis Results

☒ 16. Notice of Violation (NOV) Letter

☒ 17. Interoffice Memorandum (IOM)

☐ 18. Enforcement Referral Report

☒ 19. Other (describe): See Comments sheet for list of Attachments

☒ 20. Ground Water Monitoring Checklist

NOTE: If a required checklist is omitted, explain: _____

COMMENTS SHEET

Section 1 Remedial investigation - of four units is
required by Section VI of Lubrizol's permit.

The four units to be investigated include:

- 1) Below-grade ^{mv} tank ^{mv} Lab-B
- 2) Below-grade concrete storage tanks
- 3) Lift Station No. 02
- 4) Aeration Lagoon

Section 1

- Below grade tank Lab B has been certified as closed by Lubrizol and an independent professional engineer. Please see attached closure certifications.

Section 1

- Below grade concrete storage tank is filled in with clay soil. Please see attached Lubrizol letter of 2/1/88.

Lift Station No. 2. - A Remedial Investigation workplan was submitted for this unit by Lubrizol letter of 2/25/88.

Section 1 Location of soil boring for this unit were determined and marked with spray paint during an inspection of the No. 2 Lift Station by Wayne Harry and Mac Vilar of the TWC. Please see attached conference memo of April 14, 1988.

Lubrizol submitted an addendum to the Remedial Investigation workplan on May 2, 1988.

COMMENTS SHEETSection 1

Aeration Lagoon - Remedial Investigation work plan for this unit was submitted with Lubrizol letter of July 29, 1987

Section 1Attachments

A-1 - Lubrizol closure certification letter of November 10, 1987

A-2 - Lubrizol correspondence of February 1, 1988

B - Conference Memo of April 14, 1988

C - Sample Inspection log

D - Lubrizol Analysis of crankcase oil

Section 1

E - Facility Map of Solid Waste Management Unit referenced to Registration Facility No.'s.

F - Facility Registration

G - Tank System Certification letter of April 19, 1988 from Law Engineering

H - Lubrizol's Closure Plan

Section 1I - Lubrizol closure certification letter of April 6, 1988
Tank B-32

J-1 Equalization Basin - functioning designation of monitor wells

J-2 - Functioning designation of monitor wells at No. 1 Lift station

J-3 Map of equalization basin with monitor wells

J-4 Map of lift station with monitor wells

K - Waste description of F-solvent waste from Waste Analysis Plan.

TWC SOLID WASTE INSPECTION REPORT
For Permitted Facilities
PERMIT COMPLIANCE CHECKLIST

TWC Reg. 30324

I. SIZE AND LOCATION OF SITE

- A. Description of waste activities and facilities is current and accurate. *(Registration update required - See Generators Checklist)*
- B. Description of facility property is current and accurate.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

II. FACILITIES AND OPERATIONS AUTHORIZED

A. Wastes Authorized

1. All wastes managed are authorized by permit. *(Comments)*
2. The sources of all wastes managed are consistent with permit provisions.
3. All wastes managed are covered by authorized waste codes.
4. Facility is compliant with any specific waste prohibitions.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☒ YES ☐ NO ☐

B. Facilities and Functions Authorized

1. Permittee is operating authorized waste management facilities.
2. All authorized facilities are utilized for permitted treatment/storage/disposal activities.
3. Facilities are operated within the authorized limits of:
- a. Maximum storage capacity
- b. Maximum total capacity
- c. Other permit limitation _____
4. Current plans and specifications for all facility components and operational methods are included in permit.
5. Modifications, additions and expansions not addressed by the permit have been authorized by amendment.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☒ YES ☐ NO ☐

N/A ☒ YES ☐ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☒ YES ☐ NO ☐

*** An entry in this column indicates corrective action or comment is needed.

Note: See the Closure and Post Closure Checklist and the Facility Status Sheet for detailed information on closure, post-closure and financial assurance.

V. STANDARD PERMIT CONDITIONS

For violations of standard permit conditions, reference the specific section of the permit provisions (A - Y) and describe in detail in the comments section.

VI. INCORPORATED REGULATORY REQUIREMENTS

- A. Facility is compliant with the reporting requirements contained in TAC ~~335.453-335.455~~ ^{335.153-335.155} pertaining to:

1. Emergency situations

N/A ☒ YES ☐ NO ☐

2. Owner/operator report

N/A ☐ YES ☒ NO ☐

3. Waste report

N/A ☒ YES ☐ NO ☐

B. Facility Standards

See Facility Standards Checklist

COMMENTS:-----

IV

- NY* 2. Indicate the documents submitted and their respective values:

☒ Sudden Liability- Amount: \$ 1,000,000 per occurrence; \$ 2,000,000 annual
☒ Non-sudden Liability- Amount: \$ 3,000,000 per occurrence; \$ 6,000,000 annual
☒ Closure Assurance- Amount: \$ 121,540 ☒ Corrective Action 2,008,500
☐ Post-Closure Assurance- Amount: \$ _____

TWC Solid Waste Inspection Report
For RCRA Permitted Facilities
FACILITIES STANDARDS CHECKLIST

TWC Reg. 30324

I. GENERAL FACILITY STANDARDS -40 CFR Part 264, Subpart B

A. IDENTIFICATION AND NOTIFICATION (264.11-.12)

1. Facility that has arranged to receive hazardous wastes from a foreign source has notified the Regional Administrator.
2. Facility receiving waste has notified generators that appropriate hazardous waste permits are in effect.

N/A ☒ YES ☐ NO

N/A ☒ YES ☐ NO

B. GENERAL WASTE ANALYSIS (264.13)

1. Facility has obtained detailed chemical and physical analysis of waste(s). *- Part B attachment 9 -*
2. Wastes received are inspected and analyzed to determine consistency with manifest or shipping paper.
3. Owner/operator has developed and follows a written waste analysis plan.
4. Waste analysis plan is maintained at the facility.
5. Waste analysis plan includes the following:

N/A ☐ YES ☒ NO

N/A ☒ YES ☐ NO

N/A ☐ YES ☒ NO

N/A ☐ YES ☒ NO

- a. Parameters for which each waste will be analyzed and the rationale.
- b. Test methods used to test for these parameters.
- c. Sampling method used to obtain representative sample.
- d. Frequency with which the initial analysis will be reviewed or repeated.
- e. The waste analysis that generators have agreed to supply (for off-site commercial facilities).

N/A ☐ YES ☒ NO

N/A ☐ YES ☒ NO

N/A ☐ YES ☒ NO

N/A ☐ YES ☒ NO

N/A ☒ YES ☐ NO

6. For off-site facilities the waste analysis plan also specifies:

- a. The procedures which will be used to identify each movement of waste at the facility.

N/A ☒ YES ☐ NO

*** An entry in this column indicates corrective action or comment is needed.

- b. The sampling method which will be used to obtain a representative sample of the waste to be identified.

N/A ___ YES ☒ NO ___

C. SECURITY (264.14)

1. Facility has adequate security to prevent unknowing site entry and minimize unauthorized entry.

N/A ___ YES ☒ NO ___

a. ___ 24-hour surveillance system, OR

b. ☒ Artificial and/or natural barrier, AND

Describe: Patrick Bayou - west side
Fences - other sides

c. ☒ Means to control access through entrances.

Describe: locked gates security guard

2. Facility has posted a sign with the legend, "Danger - Unauthorized Personnel Keep Out " in the appropriate location.

N/A ___ YES ☒ NO ___

D. GENERAL INSPECTION REQUIREMENTS (264.15)

1. Owner/operator has developed and follows an adequate written inspection plan.

N/A ___ YES ☒ NO ___

2. Inspection plan and schedule are maintained at the facility.

N/A ___ YES ☒ NO ___

3. Inspection plan provides for the inspection of the following:

a. Monitoring equipment

N/A ___ YES ☒ NO ___

b. Safety and emergency equipment

N/A ___ YES ☒ NO ___

c. Security devices

N/A ___ YES ☒ NO ___

d. Operating and structural equipment

N/A ___ YES ☒ NO ___

4. Inspection plan identifies types of problems to be looked for.

N/A ___ YES ☒ NO ___

5. Malfunction or deterioration of equipment or structures revealed by inspection have been remedied.

N/A ___ YES ☒ NO ___

6. Owner/operator maintains an inspection log of the following:

a. Date and time of inspection

b. Name of inspector

c. Notation of observations *gauge not working on (A1)*

d. Date and nature of repairs or remedial action *work orders*
(See attached sample inspection log)

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

E. PERSONNEL TRAINING (264.16)

1. Facility personnel have successfully completed a training program of (☒) classroom instruction and/or (☒) on-the-job training consistent with the requirements of 40 CFR Part 264, including (check one or both above):

a. Program direction by a person trained in hazardous waste management procedures. *(Part B. App. 10)*
Instructors name not always on

b. Program designed to ensure effective emergency response. *personal training records for hazardous waste training courses.*

c. Completion of program within six months of date of employment

d. Annual review of training by personnel.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

2. Owner/operator maintains the proper training records at the facility.

N/A ☐ YES ☒ NO ☐

3. Training records include:

a. Name, job title, and job description of each employee in a position related to hazardous waste management.

b. Written description of type and amount of training.

c. Documentation and record of training given each employee.

4. Training records are maintained for the appropriate length of time.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

F. IGNITABLE, REACTIVE OR INCOMPATIBLE WASTES (264.17)

1. Owner/operator has taken appropriate precautions to prevent ignition or reaction of wastes, including separation and protection.

2. Smoking and open flames are confined to designated areas.

3. " No Smoking " signs are posted in areas of ignition hazard.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☒ YES ☐ NO ☐

II. PREPAREDNESS AND PREVENTION - 40 CFR Part 264, Subpart C

1. Facility is equipped with:

a. Internal communication or alarm system capable of providing immediate emergency instruction to facility personnel.

N/A ☐ YES ☒ NO ☐

b. Telephone or two-way radio to contact emergency response personnel.

N/A ☐ YES ☒ NO ☐

c. Portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment.

N/A ☐ YES ☒ NO ☐

d. Water at adequate volume and pressure to service fire control equipment.

N/A ☐ YES ☒ NO ☐

CIMA member

2. Facility emergency alarm, communication and control equipment is inspected and maintained to ensure proper operation in time of emergency. *(monthly fire drills)*

N/A ☐ YES ☒ NO ☐

3. All personnel handling hazardous wastes have immediate access to the internal alarm system or emergency communication system (also applies to any employee occupying facility alone).

N/A ☐ YES ☒ NO ☐

4. Aisle space is maintained to allow unobstructed movement of personnel and emergency response equipment.

N/A ☐ YES ☒ NO ☐

5. Owner/operator has attempted to make the following arrangements with local authorities:

a. Familiarize police, fire departments and emergency response teams with facility layout and operation.

N/A ☐ YES ☒ NO ☐

b. Designate a primary and support agency where more than one may respond to an emergency.

N/A ☐ YES ☒ NO ☐

c. Agreements with state emergency response teams, emergency response contractors and equipment suppliers.

N/A ☐ YES ☒ NO ☐

d. Arrangements to familiarize local hospitals with properties of hazardous wastes managed and potential injuries and health care emergency requirements.

N/A ☐ YES ☒ NO ☐

6. Owner/operator has documented any refusal of state or local agency to enter into such arrangements.

N/A ☒ YES ☐ NO ☐

III. CONTINGENCY PLAN AND EMERGENCY PROCEDURES - 40 CFR Part 264, Subpart D

1. Facility has an adequate contingency plan, consistent with the requirements of 40 CFR Part 264.51-54:

N/A ☐ YES ☒ NO ☐

- (Part B all 8)*
a. Plan describes actions taken by personnel in response to emergency situations.

N/A ☐ YES ☒ NO ☐

- b. Plan describes arrangements with state and local emergency response agencies.

N/A ☐ YES ☒ NO ☐

- c. Plan lists names, addresses and phone numbers of personnel qualified as emergency coordinator in priority order.

N/A ☐ YES ☒ NO ☐

- d. Plan includes a list of all emergency equipment on site and the location and description of equipment.

N/A ☐ YES ☒ NO ☐

- e. Plan includes an adequate evacuation plan for facility personnel.

N/A ☐ YES ☒ NO ☐

- f. Plan is maintained at the facility.

N/A ☐ YES ☒ NO ☐

- g. Plan has been submitted to all state and local agencies providing emergency response services.

N/A ☐ YES ☒ NO ☐

- h. Emergency coordinator is on site or on call at all times.

N/A ☐ YES ☒ NO ☐

IV. MANIFEST SYSTEM, RECORDKEEPING AND REPORTING - 40 CFR Part 264, Subpart E

1. Facility receives hazardous waste that requires a manifest.

YES ☐ NO ☒

2. Owner/operator properly completes and handles manifest.

N/A ☐ YES ☒ NO ☐

3. Wastes received from a rail or water transporter (bulk shipment) are accompanied by a properly executed shipping paper.

N/A ☒ YES ☐ NO ☐

4. All shipments of wastes received have been consistent with the manifest or shipping paper.

N/A ☒ YES ☐ NO ☐

5. Discrepancies in manifest have been noted and reconciled with the generator or transporter.

N/A ☒ YES ☐ NO ☐

6. Manifest records are maintained at the facility for the required three years.

N/A ☐ YES ☒ NO ☐

7. Operating record reflects the following:

- a. Description and quantity of each hazardous waste **received** and method and date of treatment, storage or disposal. N/A ☒ YES ☐ NO ☐
- b. Location and quantity of each hazardous waste within the facility. *inspection logs (tank levels)* N/A ☐ YES ☒ NO ☐
- c. Records and results of waste analyses. N/A ☐ YES ☒ NO ☐
- d. Summary reports of all incidents that require implementing the contingency plan. N/A ☒ YES ☐ NO ☐
- e. Records and results of inspections. N/A ☐ YES ☒ NO ☐
- f. Groundwater monitoring, testing and analytical data where required by 40 CFR Part 264, Subpart F. *- Groundwater Monitoring Required by Compliance Plan -* N/A ☒ YES ☐ NO ☐
- g. For off-site facilities, ^{monitoring} notices of current permit status and authority. N/A ☒ YES ☐ NO ☐
- h. Closure cost estimates. N/A ☐ YES ☒ NO ☐
- i. Post closure cost estimates. N/A ☒ YES ☐ NO ☐

8. Owner/operator has submitted the appropriate reports:

- a. Unmanifested waste report. N/A ☒ YES ☐ NO ☐
- b. Releases, fires, explosions. N/A ☒ YES ☐ NO ☐
- c. Facility closures. N/A ☐ YES ☒ NO ☐

COMMENTS: (Comments attached)

COMMENTS SHEETSection II A11 TWC permitted dist No. 03, Tank W06

(Registration fac. No. 07) is listed to contain a hazardous waste
(crankcase oil, waste no. 04) ^{DOOS} which is not authorized by
the permit. Lubrizol's letter to Ed Hutton (TWC) of
12/9/87 contains analysis indicating that the oil
is not hazardous due to barium (DOOS). Please see
^{ATTACHMENT D (a)} attached analysis. The registration should be updated.

Section 1 to reflect this.Section 1Section 1

GENERATORS CHECKLISTSection A - HW DETERMINATION and NOTIFICATION (TAC 335.62,.63,.6)

1. Has generator completed an appropriate **hazardous waste determination** for each solid waste produced? YES ☒ NO ☐
2. Check the method used for determination:
- ☒ a. Listed as a hazardous waste in 40CFR Part 261, Subpart D.
 - ☐ b. Process or materials knowledge.
 - ☒ c. Tested for characteristics as identified in Part 261, Subpart C.
(If equivalent test method is used, attach a copy)

NOTE: If a hazardous determination has not been made or appears to be incorrect, the inspector should obtain a sample of the waste for analysis and explain in comments.

3. Has the facility received an EPA ID number? N/A ☐ YES ☒ NO ☐
4. Is notification of all waste streams generated correct? YES ☒ NO ☐
5. Is notification of all waste management (TSD) methods correct? (Comments) YES ☐ NO ☒
6. Does facility generate, treat, store, or dispose of **PCB wastes**? YES ☒ NO ☐
If yes, describe storage and disposition:

Some transformers and capacitors containing PCB are occasionally generated. They are stored on pallets in a PCB designated area and disposed of by Rollins

7. Does this facility generate **used oils**? YES ☒ NO ☐
If yes, describe storage and disposition:

Stored in a tank or drums prior to off-site disposal by HESCO.

8. Does this facility generate **spent solvents**? YES ☒ NO ☐
If yes, describe storage and disposition:

Spent solvents stored in a bulk waste tank prior to off-site disposal by HESCO.

9. Does this facility utilize **sumps** in the management of hazardous waste? YES ☒ NO ☐
If yes, describe use:

Organic drainings from tank farm areas are collected in sumps and removed by vacuum truck and transferred to tanks on-site for storage prior to off-site disposal

*** An entry in this column indicates corrective action or comment is needed.

Section B - UNAUTHORIZED DISCHARGES (335.4 & Chapter 26)

1. Is there evidence of spills, unauthorized discharges or threats of such discharges?
(a) If yes, have they been reported and remedied?

YES ___ NO ☒ ***
N/A ☒ YES ___ NO ___

Section C - INTERNATIONAL SHIPMENTS (335.76)

1. If generator **exported** hazardous wastes, was the appropriate notification made to the EPA?
2. Was the waste manifested and signed by the foreign consignee?
3. Has confirmation of waste transportation out of the country been received by the generator?

N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___

Section D - RECORDKEEPING and REPORTING (335.9, .13, .329, .70-71)

1. Does generator maintain the following records and reports, if applicable, for **three years**?
- a. Waste shipping manifests
 - b. Monthly off-site shipment summaries (out-of-state only)
 - c. Quarterly on-site land disposal summaries
 - d. Monthly waste receipt summaries
 - e. Company records of indus. solid waste activities [335.9(a)(1)]
 - f. Company records of municipal hazardous waste activities for generators of >100 kg/month [335.9(a)(1)]
 - g. Analytical results of haz. waste determinations
 - h. Annual reports (submitted by Jan 25)
2. Has generator submitted **exception reports** to TWC for any original (white) copies of manifests not received back?

N/A ___ YES ☒ NO ___
N/A ___ YES ☒ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___
N/A ☒ YES ___ NO ___

+++ IF GENERATOR DISPOSES OF WASTES ON-SITE ONLY, WRITE N/A IN SECTIONS E & F +++

Section E - MANIFEST REQUIREMENTS (335.10)

1. Does generator use Waste Manifests when shipping Hazardous and Class I Nonhazardous wastes offsite?
2. Are Waste Manifests properly completed and signed?
3. Are off-site disposal facilities RCRA-permitted or operating under RCRA interim-status standards?

N/A ___ YES ☒ NO ___
N/A ___ YES ☒ NO ___
N/A ___ YES ☒ NO ___

4. Identify primary **off-site disposal or recycling facilities:** Texas Ecologist
Hanesbrough Energy Systems, Crowley LA (HESCO), Rollins, BFI.

NOTE: If the SQG exclusion applies, check for compliance with appropriate SQG rules.

++++ STOP & SIGN HERE IF FACILITY QUALIFIES AS A SMALL QUANTITY GENERATOR ++++
Signed: _____

Section F - PRETRANSPORT REQUIREMENTS (335.65-68)

1. Are hazardous wastes **packaged** in accordance with DOT requirements (49CFR Parts 173,178,179) before being offered for transport? ^{Not} (if observed) N/A ☒ YES ☐ NO ***
2. Are hazardous waste packages **labeled** and **marked** in accordance with 49CFR Part 172 before being offered for transport? ^{Not} (if observed) N/A ☒ YES ☐ NO
3. Is each container of 110 gallons or less marked with the following hazardous waste **warning label** before being offered for transport? ^{Not} (if observed) N/A ☒ YES ☐ NO
- "HAZARDOUS WASTE---Federal Law Prohibits Improper Disposal.
If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.
Generator's Name and Address _____
Manifest Document No. _____"
4. Are vehicles transporting hazardous wastes **placarded** in accordance with DOT regulations (49CFR Part 172 Subpart F)? ^{Not} (if observed) N/A ☒ YES ☐ NO

Section G - ACCUMULATION TIME EXEMPTION (335.69)

NOTE: Hazardous wastes may be accumulated in Containers or Tanks for up to 90 days without a permit.

1. Is the beginning **date** of Accumulation Time clearly indicated on each container? N/A ☐ YES ☒ NO
2. Is each container or tank clearly labeled or marked "Hazardous Waste"? N/A ☐ YES ☒ NO
3. Did the facility exceed the 90-day storage limitation? N/A ☐ NO ☒ YES

NOTE: Attach a Container Checklist for each container storage area.
Attach a Tanks Checklist for each tank (or each group of similar tanks).

NOTE: If this is a Treatment, Storage, or Disposal Facility, proceed to General Facilities Checklist.

COMMENTS SHEET

Section A 15 The Notice of Registration needs to be updated to reflect the following:

On-site solid waste management facility No 05 (Tank W-3) was noted as Inactive during the inspection. Lubrizol's tank assessment determined that this tank could not be certified as suitable for hazardous waste storage.

(< 90 day)
Tank Please see attached Tank Assessment
Section 1 Letter from Law Engineering of April 19, 1988.

Facility No 07 (Tank W-6) is a permitted Active tank. The registration lists this tank as Inactive. The registration lists the capacity as 25,320 gallons while the permitted capacity is 22,800 gallons.

Section 1
Facility No 08 (Tank T-19P) was noted as Inactive during the inspection. This tank failed the Tank Assessment and could not be certified as suitable for hazardous waste storage. Please see Tank Assessment letter from Law Engineering of April 19, 1988.

Section 1
Facility No. 13 (Tank T-23X) ^{mv} is listed as Inactive on the Registration. This tank was noted as Active during the inspection. The material contained in this tank (^{sodium} aluminate) ^{mv} is reused as a substitute for a commercial product for ionic flocculation in ^{the wastewater} treatment system.

Facility No. 14 (Tank CA-1) is a permitted tank. The registration lists the capacity as 15,231 gallons while the permitted capacity is 17,600 gallons.

COMMENTS SHEET

Section 1 Facility No 15 (Tank J-42) is a permitted tank with a permitted capacity of 9000 gallons. The registration lists the capacity as 10,000 gallons.

Facility No 18 (Tank B-32) is listed as an Inactive facility on the Registration. The tank was certified closed by Lubrizol and an independent professional engineer by

Section 1 Lubrizol letter of April 6, 1988. TWC acknowledges the closure by letter dated April 25, 1988. This tank should be listed as Closed on the registration.

Facility No. 25 Tank RA-3 is listed as storage tank on the Registration. It was noted as a < 90 day storage

Section 1 tank area.

Facility No. 28 ^(Tank WU-2) A is listed as a storage tank on the registration. It was noted as a < 90 day storage tank.

Facility No. 40 is listed as a storage tank

Section 1 on the registration. It was noted as a < 90 day storage tank.

TWC Solid Waste Inspection Report
For Permitted Facilities
(40 CFR Part 264, Subpart J)
TANKS CHECKLIST

TWC Reg. 30324
Reg. Issued N. J. 01, 17, 15
Tanks W-6, CA 1, J-42

A. SURFACE TANKS AND FUNCTIONS AUTHORIZED (264.190)

1. Refer to Section II of the Permit Compliance Checklist and the permit in question. Review the description of authorized tanks - type of tank, capacity, material of construction, I.D. number, purpose and type of waste authorized.

2. Is facility compliant with the permit provisions for functions and facilities authorized?

N/A ☐ YES ☒ NO ☐

3. Are there any **covered underground tanks** in use for hazardous waste storage which cannot be entered?

N/A ☐ YES ☐ NO ☒

a. If yes, is the "underground" tank indicated in this permit?

N/A ☒ YES ☐ NO ☐

B. DESIGN OF TANKS (264.191)

1. Records indicate that the minimum shell thickness authorized by the permit is being maintained.

N/A ☒ YES ☐ NO ☐

2. Maximum liquid depths specified in the permit are being maintained within authorized limits.

N/A ☐ YES ☒ NO ☐

C. GENERAL OPERATING REQUIREMENTS (264.192)

1. Only wastes compatible with tank material (or suitable protective liner) are placed in tank.

N/A ☐ YES ☒ NO ☐

2. Continuous feed tanks are equipped with functional overfilling controls.

N/A ☒ YES ☐ NO ☐

3. Sufficient freeboard is maintained in uncovered tanks to prevent overtopping.

N/A ☒ YES ☐ NO ☐

4. The drainage control system is operated to prevent the escape of spills, rainfall and run-on waters.

N/A ☐ YES ☒ NO ☐

5. Liquids contained within the drainage control system are removed and disposed of promptly and according to permit.

N/A ☐ YES ☒ NO ☐

*** An entry in this column indicates corrective action or comment is needed.

D. INSPECTIONS (264.194)

1. Facility records indicate that the owner/operator inspects, where present, the following, at least daily:

a. Discharge control equipment (waste feed cut-off, by-pass, and/or drainage system).

N/A ☐ YES ☒ NO ☐

b. Monitoring equipment (pressure, temperature, volume, etc.).

N/A ☐ YES ☒ NO ☐

c. Level of waste in each uncovered tank.

N/A ☒ YES ☐ NO ☐

2. Records indicate that the owner/operator inspects the following at least weekly:

a. Construction materials of tanks for corrosion or leaks.

N/A ☐ YES ☒ NO ☐

b. Construction materials of and the area surrounding containment structures for erosion or evidence of leakage.

N/A ☐ YES ☒ NO ☐

c. Exhaust from vapor control system (sampled and analyzed).

N/A ☒ YES ☐ NO ☐

3. Records indicate inspections or determination of tank shell thickness.

N/A ☒ YES ☐ NO ☐

4. Is there a written inspection schedule ?

N/A ☐ YES ☒ NO ☐

a. If yes, the schedule is kept at the site.

N/A ☐ YES ☒ NO ☐

b. If no, explain in comments.

5. The contingency plan specifies procedures to use in response to tank spills or leakage.

N/A ☐ YES ☒ NO ☐

E. CLOSURE (264.197)

1. The closure plan specifies that all hazardous waste and residue must be removed from tanks, discharge control equipment and containment structures.

N/A ☐ YES ☒ NO ☐

F. IGNITABLE, REACTIVE & INCOMPATIBLE WASTES (264.199)

1. Are **ignitable** wastes placed in tanks?

YES ☒ NO ☐

(WC-6)

If YES:

- a. Are they treated, rendered or mixed before or immediately after placement in the tank so they no longer meet the definition of ignitable

or

- b. Protected from sources of ignition?

N/A ☐ YES ☒ NO ☐

NOTE: N/A if the tank is used solely for emergencies.

2. Are **reactive** wastes placed in tanks ?

YES ☐ NO ☒

If YES:

- a. Are they treated, rendered or mixed before or immediately after placement in the tank so they no longer meet the definition of reactive

or

- b. Is the waste protected from sources of reaction.

N/A ☒ YES ☐ NO ☐

NOTE: N/A if the Tank is used solely for emergencies.

3. Are **incompatible** wastes placed in the same tank?

YES ☐ NO ☒

- a. If YES, does the owner/operator take precautions to prevent reactions which:

- 1) Generate extreme heat or pressure, fire or explosion, or violent reaction.
- 2) Produce uncontrolled toxic mists, fumes, dusts, or gases in sufficient quantities to threaten human health or the environment.
- 3) Produce uncontrolled flammable fumes or gases in sufficient quantities to pose a risk of fire or explosion.
- 4) Damage the structural integrity of the device or the facility.
- 5) Otherwise threaten human health or the environment.

N/A ☒ YES ☐ NO ☐

N/A ☐ YES ☐ NO ☐

N/A ☐ YES ☐ NO ☐

N/A ☐ YES ☐ NO ☐

N/A ☒ YES ☐ NO ☐

5. OTHER PERMIT PROVISIONS

1. Where conditions exist for the reuse of waste-derived fuel, all on-site terms of the permit are being met until shipment off-site for beneficial use. N/A ☐ YES ☒ NO ☐
2. All pumps, fire and spill control, decontamination and other equipment are maintained in good functional condition. N/A ☐ YES ☒ NO ☐
3. All standard permit conditions relevant to this facility are being complied with. N/A ☐ YES ☒ NO ☐

COMMENTS

Lubrizol has three permitted tanks: WO-6, CA-1 and J-42.

CA-1 - 17,600 gallon skirted fiberglass tank with concrete pad and dike

J-42 - 9,000 gallon fiberglass tank with concrete pad and dike

WO-6 22,800 gallon flat bottom carbon steel tank on concrete pad with dikes on 2 sides and 2 sides open

TWC Solid Waste Inspection Report
(CFR 265.190-.199)

TANKS CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 456
8, 9, 11, 16, 23, 28, 37, 38, 40, 43

Class of Waste (11 N/A)

W03, W03, W03, T-19W, T-19W, T-19W, H-6, RA-3, W02,
W03, P-25, W02, W02, P-19W
Use of Tank: Treatment ☒ Storage ☒

Type of Wastes: Organic liquid and water (H&NH) (Waste No's 019 and 020)
(W02)

Type of Tank: Elevated ☒ On-ground ☒ Below-grade ☐ Underground ☐

Describe Tank Construction: Carbon steel except for W03 T-19W and
W02-2 which are fiberglass

Section A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or tank failure? NO ☒ YES ☐

2. Is the tank **uncovered**? YES ☐ NO ☒

If yes:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ☒ YES ☐ NO ☐

Describe: _____

3. Is the tank **continuous-feed**? YES ☐ NO ☒

If yes:

Is there a feed-cutoff or bypass to a standby tank? N/A ☒ YES ☐ NO ☐

Section B - WASTE ANALYSES

1. Is the tank used to treat or store **significantly different** wastes? YES ☐ NO ☒

If yes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or

Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ☒ YES ☐ NO ☐

*b. Are records available of these
wastes analyses in the operating record?

N/A ☒ YES ☐ NO ☐

* Not applicable if tank is under the 90-Day accumulation exemption

** Not applicable if tank is used solely for emergencies.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items, if present, inspected at least daily:

- | | |
|--|--|
| a. Discharge control equipment?
(intake valves, bypass systems, etc.) | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Monitoring equipment (pressure gauges, etc.)? | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Data gathered from monitoring equipment? | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| d. Level of waste in each uncovered tank? | N/A <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> |

2. Are the following items inspected at least ^{Daily}weekly:

- | | |
|---|---|
| a. Construction materials of tank for corrosion and leaks? | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Construction materials of, and area immediately surrounding,
discharge confinement structures (dikes) for erosion or leaks? | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |

*3. Is a **written inspection schedule** kept at the site? N/A ☐ YES ☒ NO ☐

*4. Are adequate **tank inspection logs** maintained for the necessary three years? N/A ☐ YES ☒ NO ☐

Section D - SPECIAL REQUIREMENTS

1. Are ignitable or **reactive** wastes are placed in the Tank? YES ☒ NO ☐

If Yes:

**a. Are they rendered non-ignitable or non-reactive

or

Are they protected from sources of ignition or reaction? N/A ☐ YES ☒ NO ☐

b. Is tank compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A ☐ YES ☒ NO ☐

2. Is the Tank is used to hold **incompatible** wastes? YES ☐ NO ☒

If Yes:

a. Are wastes managed so as to prevent violent reactions, toxic or flammable gases, damage to the tank, or threat to humans or the environment? N/A ☒ YES ☐ NO ☐

b. Is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A ☒ YES ☐ NO ☐

Comments: Refer to Registration for tank capacities.

(Fac No 05) WU-3 was empty and is INACTIVE (failed tank assessment)

(Fac No 08) T-19P is INACTIVE (failed tank assessment)

(Fac No 11) T-19Y is a processing tank (oil-water separator) in WWTS.

TWC Solid Waste Inspection Report
(CFR 265.190-.199)

TANKS CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 10, 12, 26, 27
29, 30, 31, 32, 33, 34

Class of Waste (NA) 35

- 19X T-20X, W-4, 11-13, RA-10, W-8, 10-21
- 9 W-10, BB 5, TC-1

Use of Tank: Treatment Storage ✓

Type of Wastes: Organic liquid and water (Waste No. 020)

Type of Tank: Elevated On-ground ✓ Below-grade Underground

Describe Tank Construction: All carbon steel except for RA-10 which
is fiberglass

Section A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or tank failure? NO ✓ YES

2. Is the tank **uncovered**? YES NO ✓

If yes:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ✓ YES NO

Describe:

3. Is the tank **continuous-feed**? YES NO ✓

If yes:

Is there a feed-cutoff or bypass to a standby tank? N/A ✓ YES NO

Section B - WASTE ANALYSES

1. Is the tank used to treat or store **significantly different** wastes? YES NO ✓

If yes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or

Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ✓ YES NO

*b. Are records available of these
wastes analyses in the operating record?

N/A ✓ YES NO

* Not applicable if tank is under the 90-Day accumulation exemption

** Not applicable if tank is used solely for emergencies.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items, if present, inspected at least daily:

a. Discharge control equipment?

(intake valves, bypass systems, etc.)

N/A ☒ YES ☐ NO ☐

b. Monitoring equipment (pressure gauges, etc.)?

N/A ☒ YES ☐ NO ☐

c. Data gathered from monitoring equipment?

N/A ☒ YES ☐ NO ☐

d. Level of waste in each uncovered tank?

N/A ☒ YES ☐ NO ☐

2. Are the following items inspected at least weekly:

a. Construction materials of tank for corrosion and leaks?

YES ☐ NO ☐

b. Construction materials of, and area immediately surrounding,
discharge confinement structures (dikes) for erosion or leaks?

YES ☐ NO ☐

*3. Is a **written inspection schedule** kept at the site?

N/A ☐ YES ☐ NO ☐

*4. Are adequate tank **inspection logs**
maintained for the necessary three years?

N/A ☒ YES ☐ NO ☐

Section D - SPECIAL REQUIREMENTS

1. Are **ignitable** or **reactive** wastes are placed in the Tank?

YES ☐ NO ☒

If Yes:

**a. Are they rendered non-ignitable or non-reactive

or

Are they protected from sources of ignition or reaction?

N/A ☒ YES ☐ NO ☐

b. Is tank compliant with the National Fire Protection
Association buffer zone requirements for covered tanks?

N/A ☒ YES ☐ NO ☐

2. Is the Tank is used to hold **incompatible** wastes?

YES ☐ NO ☒

If Yes:

a. Are wastes managed so as to prevent violent reactions,
toxic or flammable gases, damage to the tank, or
threat to humans or the environment?

N/A ☒ YES ☐ NO ☐

b. Is the Tank washed prior to placement
of wastes incompatible with previously stored wastes?

N/A ☒ YES ☐ NO ☐

Comments: Please See Registration for capacities

TWC Solid Waste Inspection Report
(CFR 265.190-.199)
TANKS CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 37

Class of Waste (H)
(Waste No. 511)

Use of Tank: Treatment Storage ✓

Type of Wastes: Lab Waste (D001) ~ 10% solvents

Type of Tank: Elevated ^{Portable tank} On-ground ✓ Below-grade Underground

Describe Tank Construction: cylindrical steel tank, portable
345 gallon capacity

Section A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or tank failure? NO ✓ YES

2. Is the tank **uncovered**? YES NO ✓

If yes:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure?

N/A ✓ YES NO

Describe:

3. Is the tank **continuous-feed**? YES NO ✓

If yes:

Is there a feed-cutoff or bypass to a standby tank?

N/A ✓ YES NO

Section B - WASTE ANALYSES

1. Is the tank used to treat or store **significantly different** wastes? YES NO ✓

If yes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or

Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ✓ YES NO

*b. Are records available of these
wastes analyses in the operating record?

N/A ✓ YES NO

* Not applicable if tank is under the 90-Day accumulation exemption

** Not applicable if tank is used solely for emergencies.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items, if present, inspected at least daily:

a. Discharge control equipment?

N/A ☐ YES ☒ NO ☐

(intake valves, bypass systems, etc.)

b. Monitoring equipment (pressure gauges, etc.)?

N/A ☐ YES ☒ NO ☐

c. Data gathered from monitoring equipment?

N/A ☐ YES ☒ NO ☐

d. Level of waste in each **uncovered** tank?

N/A ☒ YES ☐ NO ☐

2. Are the following items inspected at least ^{Daily}~~weekly~~:

a. Construction materials of tank for corrosion and leaks?

YES ☒ NO ☐

b. Construction materials of, and area immediately surrounding,
discharge confinement structures (dikes) for erosion or leaks?

YES ☒ NO ☐

*3. Is a **written inspection schedule** kept at the site?

N/A ☐ YES ☒ NO ☐

*4. Are adequate **tank inspection logs**
maintained for the necessary three years?

N/A ☐ YES ☒ NO ☐

Section D - SPECIAL REQUIREMENTS

1. Are ignitable or **reactive** wastes are placed in the Tank?

YES ☒ NO ☐

If Yes:

**a. Are they rendered non-ignitable or non-reactive

or

Are they protected from sources of ignition or reaction?

N/A ☐ YES ☒ NO ☐

b. Is tank compliant with the National Fire Protection
Association buffer zone requirements for covered tanks?

N/A ☐ YES ☒ NO ☐

2. Is the Tank is used to hold **incompatible** wastes?

YES ☐ NO ☒

If Yes:

a. Are wastes managed so as to prevent violent reactions,
toxic or flammable gases, damage to the tank, or
threat to humans or the environment?

N/A ☒ YES ☐ NO ☐

b. Is the Tank washed prior to placement
of wastes incompatible with previously stored wastes?

N/A ☒ YES ☐ NO ☐

Comments: _____

TWC Solid Waste Inspection Report

TWC Reg. No. 30324

TANKS CHECKLIST

Reg. Facility No. 3

(C-61)
Class of Waste (H)
(Waste No. 009)

Use of Tank (check): Treatment ☐ Storage ☒

Type of Waste: Clarifier Sludge containing trace organics
(Skirted Tanks)

Type of Tank: Elevated ☒ On-ground ☐ Below-grade ☐ Underground ☐

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: 4849 gallon carbon steel tank

Section A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO ☒ YES ☐

2. If the Tank is **uncovered**:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ☒ YES ☐ NO ☐

Describe: _____

3. If the Tank is **continuous-feed**:

Is there a feed cutoff or bypass to standby Tank? N/A ☒ YES ☐ NO ☐

Section B - WASTE ANALYSES

1. If the Tank is used to treat or store **significantly different** wastes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or
Is there written, documented information
on similar treatment or storage of similar wastes? N/A ☒ YES ☐ NO ☐

*b. Are records available of these
wastes analyses in the operating record?

N/A ☒ YES ☐ NO ☐

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass, and/or drainage system)? N/A YES NO
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A YES NO
- c. Data gathered from monitoring equipment? N/A YES NO
- d. Level of waste in each **uncovered** tank? N/A YES NO

2. Are the following items inspected at least ^{Daily}~~weekly~~:

- a. Construction materials of tank for corrosion and leaks? YES NO
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES NO

*3. Is a written **inspection schedule** kept at the site? N/A YES NO

*4. Are adequate Tank **inspection logs** maintained for the necessary three years? N/A YES NO

Section D - SPECIAL REQUIREMENTS

1. If **ignitable** and **reactive** wastes are placed in the Tank:

- a. Are they rendered non-ignitable or non-reactive ^{or} Are they protected from sources of ignition or reaction? (N/A if the Tank is used solely for emergencies) N/A YES NO
- b. Are they compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A YES NO

2. If the Tank is used to hold **incompatible** wastes:

Is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A YES NO

Tank Capacity & Dimensions: 4849 gallon tank

Comments:

TWC Solid Waste Inspection Report
(CFR 265.170-177)

CONTAINER STORAGE AREA CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 20, 21, 22

Class of Wastes (1H NH)

Roll off bins, except for Fac. No 20

- ***
1. Are containers in good condition? YES ☒ NO ☐
 2. Are the containers compatible with the wastes being stored? YES ☒ NO ☐
(hazardous containers)
 3. Are containers kept closed and stored in a safe manner? YES ☒ NO ☐
 4. Are containers inspected weekly for leakage and deterioration? YES ☒ NO ☐
(Hazardous Containers)
 - *5. Are containers holding **ignitable** or **reactive** wastes kept at least 15 meters (50 ft) from the facility's property line? N/A ☒ YES ☐ NO ☐
 6. Are containers holding **incompatible** wastes separated by a physical barrier or sufficient distance? N/A ☒ YES ☐ NO ☐
 7. Does the storage area have containment protection? YES ☒ NO ☐
(Drains to WWTs)

Describe Container Storage Area: Roll off bins are stored on
concrete pads with drainage to wastewater treatment system

[Hazardous Container storage areas - Facility No. 20, 21; the
rest are NH. Refer to registration]

NOTE: 90-Day accumulation rules are in TAC 335.69.

Point-of-generation (satellite) accumulation rules are in TAC 335.69(d) & (e).

* Not Applicable to Small Quantity Generators.

*** An entry in this column indicates corrective action or comment is needed.

TWC Solid Waste Inspection Report
(CFR 265.220-.230)

SURFACE IMPOUNDMENT CHECKLIST

TWC Reg. No. 30324

Reg. Facility NO. Not on Reg

Class of Wastes (14)

Use of Impoundment: ^{WWTs} Treatment ☒ Storage ☐ Disposal ☐

Type of Waste: Process wastewaters with low concentrations of phenol, MEK, toluene, barium compounds and bromine compounds

Type of Liner: Clay bottom, concrete sides

Type of Dike: concrete sides

Is there a Leachate collection and removal system? YES ☐ NO ☒

Does owner/operator intend to "clean close"
(remove all hazardous liquids and sludges) the impoundment at Closure? N/A ☒ YES ☐ NO ☐

A. GENERAL OPERATING AND CONTAINMENT REQUIREMENTS

1. Is there at least 2 ft. (60 cm) of freeboard? YES ☒ NO ☐
2. Is there evidence of overtopping of the dikes? NO ☒ YES ☐
3. Is there evidence of dike seepage, erosion or instability? NO ☒ YES ☐
4. Do earthen dikes have protective cover to minimize erosion?
(concrete sides) N/A ☒ YES ☐ NO ☐

B. WASTE ANALYSIS AND TRIAL TESTS

1. If impoundment is used to treat or store **substantially different** wastes:

- a. Are waste analyses and trial treatment
or storage tests done on these different wastes?

or

Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ☒ YES ☐ NO ☐

- b. Are records available of these
waste analyses in the operating record?

N/A ☒ YES ☐ NO ☐

C. INSPECTION REQUIREMENTS

1. Is the impoundment **freeboard** inspected daily? YES ☐ NO ☐
2. Is the impoundment, dike, and surrounding vegetation
inspected weekly for leaks, deterioration, or failures? YES ☐ NO ☐



*** An entry in this column indicates explanation/response is needed

D. SPECIAL REQUIREMENTS

1. If **ignitable** or **reactive** wastes are placed in the impoundment: (circle)

a. Are they rendered non-ignitable or non-reactive

or

b. Protected from sources of ignition or reaction?

N/A ☒ YES ☐ NO ☐

NOTE: N/A if impoundment is used solely for emergencies.

2. If the impoundment is used to hold **incompatible** wastes:

Are they handled so as to prevent violent reactions,
toxic or flammable gases, damage to the impoundment,
or threat to humans or the environment?

N/A ☒ YES ☐ NO ☐

E. GROUND WATER MONITORING

1. Does the impoundment have a RCRA groundwater monitoring system? N/A ☐ YES ☒ NO ☐
(Use GWM checklist if applicable)

(7/29/87) Remedial investigation workplan required by permit
includes proposed wells. (2) wells installed Oct 1984
(AE-1, AE-2) near aeration basin.

F. HSWA REQUIREMENTS

1. Is the impoundment a "new unit"*,
a replacement of an existing unit,
or a lateral expansion of an existing unit?

YES ☐ NO ☒

If Yes:

a. Has impoundment received haz. waste since May 1985?

N/A ☒ YES ☐ NO ☐

b. Does the impoundment have two or more liners and
a leachate collection system between such liners?

N/A ☒ YES ☐ NO ☐

Capacity & Dimensions: Top Dimensions 455' X 153'

depth 17' Bottom Dimensions 387' X 82' - Volume - 4.8 Million gallons

Comments: Five mechanical aerators provide mixing and oxygen transfer
to basin waters.

Refer to Remedial investigation workplan of 7/29/87 for proposed monitor
and
well, boring locations and sampling schedule.

*A surface impoundment that first received hazardous waste after Nov. 8, 1984.

SATELLITE ACCUMULATION AREA CHECKLIST

NOTE: Generators may accumulate HW in containers at or near the point-of-generation without a permit, interim-status, or 90-day accumulation requirements if they meet the following conditions.

1. Are containers in good condition? YES ☒ NO ☐
2. Is the waste compatible with the containers? YES ☒ NO ☐
3. Are containers kept **closed** (except when adding or removing waste)? YES ☒ NO ☐
4. Are containers marked "hazardous waste"
or labeled to identify the contents? YES ☒ NO ☐
5. If waste accumulation has exceeded 55 gallons (or 1 qt. of acutely HW):
 - a. Has container holding excess amount
been marked with beginning **date** of excess accumulation? N/A ☒ YES ☐ NO ☐
 - b. Have excess amounts remained in satellite area over 3 days? N/A ☒ NO ☐ YES ☐

COMMENTS: Three 55 gallon drums (partially full $\leq 1/3$ each)
Outside area labeled with sign "Paint Waste Area"

TWC Solid Waste Inspection Report
For Permitted Facilities
40 CFR Part 264, Subpart G
CLOSURE/POST CLOSURE CHECKLIST

TWC Reg. No. 38324

I. CLOSURE PLAN (264.112)

- A. Does the facility have a written closure plan? N/A ☐ YES ☒ NO ☐
- Part B attachment 11 -
1. Closure plan identifies the steps necessary to close or partially close facility at any point in its operating life. N/A ☐ YES ☒ NO ☐
2. Closure plan includes the following:
- a. A description of how and when facility will be closed. N/A ☐ YES ☒ NO ☐
- b. The maximum extent of operation which will be unclosed during the life of the facility N/A ☒ YES ☐ NO ☐
- c. An estimate of the maximum inventory of wastes in storage and treatment at any time in the life of the facility. (Comments) N/A ☐ YES ☐ NO ☒
- d. A description of the steps needed to decontaminate facility equipment during closure. N/A ☐ YES ☒ NO ☐
- e. An estimate of the expected year of closure. N/A ☐ YES ☒ NO ☐
(2019 or 30 days after final receipt of waste.)
- f. A schedule for final closure which addresses the steps for closure identified under A.1. N/A ☐ YES ☒ NO ☐
3. Owner/operator has modified closure plan for a permit amendment or change in operation? (Comments) N/A ☐ YES ☐ NO ☒
4. Owner/operator has notified Executive Director at least 180 days prior to initiating closure activities. N/A ☐ YES ☒ NO ☐

B. Closure - Time Allowed (264.113), Disposal (264.114), Certification (264.115)

1. Within 90 days of a final waste receipt, owner/operator treated, removed or disposed of all hazardous wastes in accordance with the approved closure plan. OR N/A ☒ YES ☐ NO ☐
2. Executive Director has authorized a longer period of time for the disposition of wastes. N/A ☒ YES ☐ NO ☐

*** An entry in this column indicates corrective action or comment is needed.

3. Within 180 days of receiving final waste volume, owner or operator has completed closure activities in accordance with the approved closure plan. OR

N/A ☒ YES ___ NO ___

4. Executive Director has authorized a longer period of time for completion of closure activities.

N/A ☒ YES ___ NO ___

5. When closure of a facility is completed, all facility equipment and structures have been properly disposed of or decontaminated.

N/A ☒ YES ___ NO ___

6. If closure of a facility has been completed, the owner/operator has submitted professional certification that facility has been closed in accordance with the approved closure plan.

N/A ☒ YES ___ NO ___

II. POST-CLOSURE PLAN (264.113)

A. Does the facility have a written post-closure plan? (Comments)

N/A ☒ YES ___ NO ___

1. Plan includes a description of the planned monitoring activities and frequencies at which they will be performed.

N/A ☒ YES ___ NO ___

2. Plan includes a description of the planned maintenance activities and frequencies at which they will be performed.

N/A ☒ YES ___ NO ___

3. The description of maintenance activities is sufficient to ensure:

a. The integrity of the cap, final cover or other containment system.

N/A ☒ YES ___ NO ___

b. The proper function of the facility monitoring equipment.

N/A ☒ YES ___ NO ___

4. Plan includes the name, address and phone number of a responsible party to contact during the post-closure care period.

N/A ☒ YES ___ NO ___

5. Post-closure plan has been modified in response to change in facility operation, design, closure schedule or other permit amendment.

N/A ☒ YES ___ NO ___

B. Notice to Local Land Authority and Deed Record (264.119 - .120)

1. Owner/operator has submitted the appropriate survey plat of land disposal areas to the local land authority within 90 days of completion of closure.

N/A ☒ YES ___ NO ___

2. Owner/operator has recorded in the property deed, or other suitable instrument, a notation that this land has been used to manage hazardous wastes and its use is restricted under this section.

N/A ☒ YES ☐ NO

COMMENTS

Section IA.2.1 Please see attached Closure Plan with comments (Attachment #)

Lubrizol's closure plan and closure plan cost estimate do not use the maximum inventory of waste in storage at any time in the life of the facility. Lubrizol's closure plan and closure plan cost estimate use 75% of total capacity. Lubrizol's permit HW 50077-000 Section IV E.1 requires that all waste be Section 1 disposal of at an authorized facility at closure.

The closure plan needs to be amended to include 100% of the total capacity. (Total permitted capacity is 49,400 gallons) Closure plan lists maximum expected inventory of 38,630 gallons. Tank B-32 should be omitted from the closure plan.

Section 1 Since it is not a permitted tank and closure has been certified by Lubrizol and an independent registered professional engineer.

Lubrizol will have to request a permit amendment to revise the closure plan as specified in 40 CFR 264.112(c)

Section IA.3.1

Lubrizol has not modified closure plan to ^{mv} reflect maximum waste inventory, closure of tank B-32, and contingent post closure plan for tanks not meeting secondary ^{containment} requirements of 264.193(b) through (f) and 264.197. Tank W0-6 does not appear

COMMENTS SHEETSection 1

to have secondary containment specified in 40 CFR 264.193.

Two sides surrounding the tanks are diked and two sides are open.

Spills or leaks from this tank would drain on the concrete pad and into a plant WWT drain or onto soil then into another plant WWT drain. *

Section II A 1 Contingent post closure care plan is required

for tanks not meeting secondary containment requirements of 264.193.

Tank WU-6 does not appear to meet the new secondary containment regulations.

Lubrizol is in the process of obtaining assessments for all hazardous waste tanks. (Please see attached letter of 4/19/88.)

Section 1 The tank assessment of 264.190 was due on 1/12/88.

* Provision III D (i) of Lubrizol's Permit requires that

all storage areas have sufficient capacity to contain the

volume of the largest tank or 10% of the total tank

capacity whichever is greater prior to January 12, 1989

Section 1 See IOM

TWC Solid Waste Inspection Report

TWC Reg. No. 30324CLOSURE-in-PROGRESS CHECKLISTReg. Facility No. 18Type of facility component: Tank B-32

1. Is the facility component being closed a RCRA unit? YES ☒ NO ☐
2. Type of closure: Full-Facility Closure ☐ Partial Closure ☒ ***
3. Has **closure plan** received TWC approval or final modification? N/A ☐ YES ☒ NO ☐
Date of approval: 2/5/88
4. Is this the last on-site facility to be closed which requires RCRA groundwater monitoring? N/A ☒ YES ☐ NO ☐
5. Has an approved **public notice** of closure been published? N/A ☒ YES ☐ NO ☐
Date published: _____
6. Is a **public hearing** required? N/A ☒ YES ☐ NO ☐
Date of hearing: _____
7. Has on-site closure work started? YES ☒ NO ☐
Date work initiated: 2/15/88
8. Is closure work proceeding according to the work schedule in the approved closure plan? N/A ☐ YES ☒ NO ☐
9. Have 180 days elapsed since TWC approval of the closure plan? N/A ☒ YES ☐ NO ☐
(CLOSURE COMPLETED)
- a. If Yes,
Has TWC approved an extension period? N/A ☒ YES ☐ NO ☐
10. Was District Office notified of sampling event when complete removal (i.e., clean closure) of a Land Disposal facility was to have been accomplished? N/A ☒ YES ☐ NO ☐
11. Were **TWC samples** taken to verify completion of closure? YES ☐ NO ☒
- NOTE: List chain-of-custody sample tag numbers in comments.
12. Is the closure work **completed**? YES ☒ NO ☐
Date of completion: 3/25/88
13. Has the closure **certification** been submitted to TWC? N/A ☐ YES ☒ NO ☐
Attach copy or explain.
Date of certification: 4/6/88
(copy attached)

*** An entry in this column indicates explanation/response is needed.

TWC Solid Waste Inspection Report

**F-Solvent LAND DISPOSAL RESTRICTION
GENERATOR CHECKLIST****A. F-SOLVENT IDENTIFICATION**

1. Does the handler generate the following hazardous wastes?

- a. F001
- b. F002
- c. F003

YES	NO
YES	NO
YES	NO

If an F003 wastestream listed solely for ignitability has been mixed with a nonrestricted solid or hazardous waste, does the resultant mixture exhibit the ignitability characteristic?

YES	NO
-----	----

- d. F004
- e. F005

YES	NO
YES	NO

2. Source of the above information: EPA Form 8700 ___; Part A ___; Part B ✓;
Other(specify): Notice of Registration

NOTE: Appendix A is useful in determining whether the facility is generating F-solvent wastes, if such wastes were not identified by the facility previously. If you are concerned that F-solvent wastes may be misclassified or mislabeled, turn to Appendix A. Note concerns below:

None

B. BDAT* TREATABILITY GROUP - TREATMENT STANDARDS IDENTIFICATION

1. Did generator correctly determine the appropriate treatability group (40CFR Part 268.41) of the waste?

YES	NO
-----	----

C. WASTE ANALYSIS

1. Did the generator determine whether the waste exceeds treatment standards based on 40CFR Part 268.7(a)?

YES	NO
-----	----

Check the method used for determination:

- ✓ a. Knowledge of wastes
- b. TCLP** Analysis
- c. Other (specify) _____

If determined by TCLP, provide: date of last test, frequency of testing, and attach test results.

Dates/frequency: _____

* Best Demonstrated Available Treatment

** Toxicity Characteristic Leaching Procedure

2. Did the F-solvent wastes exceed applicable treatability group standards upon generation? [Section 268.7(a)(2)]

YES ☒ NO ☐

3. Did the generator **dilute** the waste or the treatment residual so as to substitute for adequate treatment? [Section 268.3]

YES ☐ NO ☒

- F005 Waste is mixed with a D001 Waste, in tank N06

D. MANAGEMENT

1. Onsite Management:

a. Are F-solvent wastes treated, stored or disposed of onsite? YES ☒ NO ☐

If yes, complete Land Restriction T/S/D Checklist; If no, answer #2.

b. Are test results maintained in the operating record? YES ☐ NO ☒

F005, by process knowledge

2. Offsite Management:

a. If F-solvent wastes exceed treatment standards, did generator provide the treatment facility with: [268.7(a)(1)]

(1) EPA number?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
(2) Applicable treatment standard?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
(3) Manifest number?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
(4) Waste analysis data, if available?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

Identify off-site treatment facilities: Hansbrough Energy Systems

Crowley, Louisiana

b. If F-solvent wastes do not exceed treatment standards, did generator provide the disposal facility with: [268.7(a)(2)]

(1) EPA Hazardous Waste number?	N/A	YES <input type="checkbox"/>	NO <input type="checkbox"/>
(2) Applicable treatment standard?		YES <input type="checkbox"/>	NO <input type="checkbox"/>
(3) Manifest number?		YES <input type="checkbox"/>	NO <input type="checkbox"/>
(4) Waste analysis data, if available?		YES <input type="checkbox"/>	NO <input type="checkbox"/>
(5) Certification regarding waste and that it meets treatment standards?		YES <input type="checkbox"/>	NO <input type="checkbox"/>

Identify Land Disposal facilities receiving BDAT certified wastes:

- c. If waste is subject to **nationwide variance** (e.g., solvent-water mixtures less than 1%), case-by-case **extension** (268.5) or a **petition** (268.6) does generator provide notice to disposer that waste is exempt from land disposal restrictions [268.7(a)(3)]?

N/A YES ☐ NO ☒

E. STORAGE OF F-SOLVENT WASTE

1. Was F-solvent waste stored for greater than 90 days (after variance 180/270 days for SQG)?

YES ☒ NO ☐

If yes, was facility operating as a TSD under RCRA interim-status or final permit?

YES ☒ NO ☐

F. TREATMENT USING RCRA 264/265 EXEMPT UNITS OR PROCESSES

(i.e., boilers, furnaces, distillation units, w.w. treatment tanks, etc.)

1. Were treatment residuals generated from RCRA 264/265 exempt units or processes?

N/A YES ☐ NO ☒

If yes, list type of treatment unit and processes: _____

NOTE: If the residuals from a RCRA-exempt treatment unit are above the treatment standards, the owner/operator is considered a generator of restricted waste. The inspector should determine whether the generator requirements, particularly waste identification requirements, have been met for the treatment residuals.

APPENDIX A

F-SOLVENT IDENTIFICATION CHECKLIST

1. Does the handler generate any of the following F001 constituents (i.e., spent halogenated solvents used in degreasing) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
trichloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methylene chloride	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,1-trichloroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
carbon tetrachloride	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
chlorinated fluorocarbons	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

2. Does the handler generate any of the following F002 constituents (i.e., spent halogenated solvents) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
trichloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methylene chloride	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,1-trichloroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
chlorobenzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
trichlorofluoromethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,2-trichloro-1,2,2-trifluoroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ortho-dichlorobenzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,2-trichloroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

3. Does the handler generate any of the following F003 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

xylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
acetone	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ethyl acetate	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ethyl benzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ethyl ether	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methyl isobutyl ketone	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
n-butyl alcohol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
cyclohexane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methanol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

If the F003 wastestream has been mixed with solid waste, does the resultant mixture exhibit the ignitability characteristic?

YES ☐ NO ☒

4. Does the handler generate any of the following F004 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

cresols and cresylic acid	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
nitrobenzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

5. Does the handler generate any of the following F005 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

toluene	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
methyl ethyl ketone	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
carbon disulfide	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
isobutanol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
pyridine	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
benzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
2-ethoxyethanol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
2-nitropropane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

6. Are any of the constituents listed in the questions 1-5 used for their "solvent" properties -- that is to solubilize (dissolve) or mobilize other constituents? The following questions will be helpful in confirming this determination.

a. Chemical Carriers? YES ☐ NO ☒
If yes, list the constituents.

b. Degreasing/Cleaning? YES ☒ NO ☐
If yes, list the constituents.

Toluene, MEK

c. Diluents? YES ☐ NO ☒
If yes, list the constituents.

d. Extractants? YES ☐ NO ☒
If yes, list the constituents.

e. Fabric Scouring? YES ☐ NO ☒
If yes, list the constituents.

f. Reaction and Synthesis Media? YES ☐ NO ☒
If yes, list the constituents.

NOTE: If answers to questions 1-6 indicate that the waste may be an F-solvent, answer question 7.

7. Are any of the above constituents solvents? A solvent is considered "spent" when it has been used and is no longer used without being regenerated, reclaimed, or otherwise reprocessed. YES ☒ NO ☐
8. If the waste is a mixture of constituents as determined in questions 1-6, answer this to determine whether it is a "solvent mixture" covered by the listings.

If the wastestream is mixed and contains more than one of the F001-F005 constituents listed in questions 1-5 (by volume), give the concentration before use of all the constituents in the solvent mixture/blend.

For example:

5%	methylene chloride
2%	trichloroethylene
25%	1,1,1-trichloroethane
68%	mineral spirits
<u>100%</u>	

If the wastestream is a mixture containing a total of 10% or more (by volume) of one or more of the F001, F002, F004, or F005 listed constituents before use, it is a listed waste.

With respect to the F003 solvent wastes, if, before use, the wastestream is mixed and contains only F003 constituents, it is a listed waste.

For example:

33%	acetone
16%	methanol
51%	ethyl ether
<u>100%</u>	

If the wastestream is a mixture containing F003 constituents and a total of 10% or more of one or more of the F001, F002, F004, and F005 listed constituents before use, it is a listed waste. For example:

50%	xylene	F003
12%	TCE	F001
38%	mineral spirits	
<u>100%</u>		

If in light of the above, the handler appears to be generating F001-F005 hazardous wastes, refer this facility to the enforcement official for follow-up actions verifying the use of solvents at the facility.

(spent equipment wash)
Lubrizol generates an F005 waste according to the Waste Analysis Plan in the Part B and on the Registration (waste No. 010).
Please see attachments.

**F-Solvent LAND DISPOSAL RESTRICTION
TREATMENT/STORAGE/DISPOSAL FACILITIES CHECKLIST**

NOTE: The federal F-solvent land disposal restriction rules became effective on November 8, 1986. A two year variance to the effective date was granted all dioxin wastes and some solvent wastes.

A. GENERAL FACILITY STANDARDS

1. Was **waste analysis plan** revised to cover Part 268 requirements? YES ☒ NO ☐
(264.13 or 265.13)
2. Did the facility obtain representative chemical and physical analysis of wastes and residues? YES ☐ NO ☒
 - a. Did testing include analyses for all F001-F005 constituents? YES ☐ NO ☒
 - b. Were analysis performed using TCLP*? YES ☐ NO ☒
 - c. Were analyses performed Onsite or Offsite? *N/A* ON ☐ OFF ☐
(identify offsite lab): _____
- d. Does the frequency of sampling appear adequate? YES ☐ NO ☐
- e. Do procedures used to identify manifest discrepancies appear adequate?
F Waste is generated and stored on-site.
F waste is not received from off-site YES ☒ NO ☐

B. STORAGE (268.50)

1. a. Does facility store restricted wastes exceeding treatment standards? YES ☒ NO ☐
If no, go to Section C.
- b. Are all containers clearly marked to identify content and date(s) entering storage? YES ☒ NO ☐
- c. Do operating records track the location, quantity, and dates that wastes exceeding treatment standards entered and were removed from storage? YES ☒ NO ☐
- d. Do operating records agree with container labeling? YES ☒ NO ☐
- e. Is waste exceeding treatment standards stored for less than one year? YES ☒ NO ☐
 - (1). If yes, can you show that such accumulation is not necessary to facilitate proper recovery, treatment, or disposal? YES ☐ NO ☒
 - (2). If yes, state how: _____

f. Were tanks emptied at least once per year, and do operating records show that volume of waste removed from tanks annually at least equals tank volume?

YES ☒ NO ☐

g. Was/is waste exceeding treatment standards stored for more than one year?

YES ☐ NO ☒

If yes, state the owner/operator's proof that such storage was solely for the purposes of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal:

h. Are F-solvent wastes exceeding treatment standards "stored" (not treated) in surface impoundments?

YES ☐ NO ☒

C. TREATMENT IN SURFACE IMPOUNDMENTS (268.4)

1. Were F001-F005 wastes exceeding treatment standards placed in surface impoundments for treatment?

YES ☐ NO ☒

If no, go to Section D.

2. Did the facility submit a certification of compliance with minimum technology and groundwater monitoring requirements, and the waste analysis plan to the EPA?

N/A

YES ☐ NO ☐

3. Have the minimum technology requirements been met?

YES ☐ NO ☐

a. If the minimum technology requirements have not been met, has a **waiver** been granted for that unit(s)?

YES ☐ NO ☐

4. Have the RCRA groundwater monitoring requirements been met? (CFR 265 Subpart F)

YES ☐ NO ☐

5. Have representative samples of sludge and supernatant from the surface impoundment been tested separately, acceptably, and in accordance with the sampling frequency and analysis specified in the waste analysis plan and are the results in the operating record?

YES ☐ NO ☐

6. Did the hazardous waste residue (sludge or liquid) exceed the treatment standards specified in 268.41?

YES ☐ NO ☐

7. Provide the frequency of analyses conducted on treatment residues:

8. Does the operating record adequately document the results of waste analyses performed in accordance with 268.41?

YES ☐ NO ☐

9. Have the hazardous waste residues that exceed the treatment standards (268.41) been removed adequately and annually? N/A ☒ YES ☐ NO
- a. If answer to question #6 is no, and the supernatant is determined to exceed treatment concentrations, is annual throughput greater than the impoundment volume? YES ☐ NO ☐
10. If residues were removed annually, were adequate precautions taken to protect liners and do records indicate that inspections of liner integrity are performed? YES ☐ NO ☐
11. When removed, were solvent wastes managed subsequently in another surface impoundment? NO ☐ YES ☐
12. When removed, were wastes treated prior to disposal? YES ☐ NO ☐
- a. If yes, are waste residues treated onsite or offsite? N/A ☒ ON ☐ OFF
- b. Identify management method: _____
- _____
- _____

D. TREATMENT

1. Did the facility operate treatment facilities for F-solvent waste (not including surface impoundments)? YES ☐ NO ☒
- If no, go to Section E.
2. Describe the treatment process for F-solvent wastes: _____
- _____
- _____
3. Does the facility, in accordance with an acceptable waste analysis plan, verify that the residue extract from all treatment processes for the F-solvent wastes are less than treatment standards? [268.7(b)(2)] N/A YES ☐ NO ☐
4. Describe frequency of testing of treatment residuals: _____
- _____
- _____
5. Was dilution used as a substitute for treatment? NO ☐ YES ☐
6. Are certifications and results of waste analyses kept in the operating record? YES ☐ NO ☐
7. Is notice (with waste no., treatment standard, manifest no., and analytical data, where available) submitted for each shipment of waste or treatment residual? [268.7(b)] YES ☐ NO ☐

8. Are certifications that wastes meet treatment standards submitted for each shipment? [268.7(b)(2)(1)]

N/A YES ☐ NO ☐

E. LAND DISPOSAL

1. Were F-solvent wastes placed in Land Disposal Units? [i.e., landfills, surface impoundments (do not include if in Section C), wastepiles, wells, land treatment units, salt domes/beds, mines/caves, concrete vaults, or bunkers]

YES ☐ NO ☒

2. Did facility have the notice and certification from generators/treaters in its operating record? [268.7(c);268.7(a),(b)]

N/A YES ☐ NO ☐

3. Did the facility obtain waste analysis data through testing of the waste to determine that the wastes are in compliance with the applicable treatment standards? [268.7(c)]

YES ☐ NO ☐

4. Were F-solvent wastes exceeding the treatment standards placed in land disposal units [268.30], excluding national capacity variances [268.30(a)]?

YES ☐ NO ☐

- a. If yes, did facility have an approved waiver based on: a no-migration petition [268.6] or an approved case-by-case capacity extension [268.5] or a variance [268.44]?

YES ☐ NO ☐

5. Were F-solvent wastes disposed of which were subject to a national or case-by-case capacity variance/extension?

YES ☐ NO ☐

- a. If yes, were these wastes disposed of in a facility that has a new, replacement, or laterally expanded landfill or impoundment?

YES ☐ NO ☐

- b. If (a.) is yes, have the minimum technology requirements been met for all such units at the facility?

YES ☐ NO ☐

6. Were adequate records of disposal maintained?

YES ☐ NO ☐

7. If wastes subject to a nationwide variance, case-by-case extensions [268.5], or no-migration petitions [268.6] were disposed, does facility have notices [268.7(a)(3)] and records of disposal?

YES ☐ NO ☐

8. What is the volume of F-solvent waste disposed to date by waste?

9. If the facility has a case-by-case extension, can the inspector verify that the facility is making progress as described in progress reports?

YES ☐ NO ☐

Appendix B

TREATMENT STANDARDS FOR F-SOLVENTS

F001-F005 SPENT SOLVENTS	CONCENTRATION (mg/l)	
	Wastewaters	Other Wastes
Acetone	0.05	0.59
N-butyl alcohol	5.0	5.0
Carbon disulfide	1.05	4.81
Carbon tetrachloride	0.05	0.96
Chlorobenzene	0.15	0.05
Cresols (cresylic acid)	2.82	0.75
Cyclohexanone	0.125	0.75
1,2-dichlorobenzene	0.65	0.125
Ethyl acetate	0.05	0.75
Ethyl benzene	0.05	0.053
Ethyl ether	0.05	0.75
Isobutanol	5.0	5.0
Methanol	0.25	0.75
Methylene chloride	0.20	0.96
Methylene chloride (from pharmaceutical industry)	12.7	0.96
Methyl ethyl ketone	0.05	0.75
Methyl isobutyl ketone	0.05	0.33
Nitrobenzene	0.66	0.125
Pyridine	1.12	0.33
Tetrachloroethylene	0.079	0.05
Toluene	1.12	0.33
1,1,1-Trichloroethylene	1.12	0.41
1,1,2-Trichloro-1,2,2-Trifluoroethane	1.05	0.96
Trichloroethylene	0.062	0.091
Trichlorofluoromethane	0.05	0.96
Xylene	0.05	0.15

GROUND WATER MONITORING CHECKLISTS**1. GROUND WATER MONITORING STATUS:**Complete the table for each **Waste Management Area (WMA)**:

WMA	Description	Activity Status	Monitoring Status	Number of Wells
1	Equalization Basin	Surface Impoundment Closed	(a)	Up 1 Dn 4
2	No. 1 Lift Station	Closed	(a)	Up 1 Dn 2
3	Aeration Basin	WWTS Impoundment Active	(b)	Up 1 Dn 1
4				Up Dn

(a) Compliance Plan of 5007, Corrective Action (b) Permit RWSC 17 Remedial Investigation
 Give date of approval for waivers, alternate plan, or assessment plan,
 as applicable: Feb. 16, 1988 Compliance Plan for Lift Station and
Equalization Basin

2. Provide a diagram locating each monitoring well and waste site(s).
 List depths, diameter and completion data on each well not included
 on the previous inspection report. (Included in previous reports)

3. Has the following been installed in the uppermost aquifer
 around each Waste Management Area:

- a. At least **one** hydraulically **upgradient** well? YES ☒ NO ☐
 b. At least **three** hydraulically **downgradient** wells? YES ☒ NO ☒
 c. Indicate WMA(s) that are not compliant: Additional monitor wells required to be installed by August 1988
per the Compliance Plan issued 2/16/88
NONE
 d. Describe possible problems on Comments Sheet.

4. If the WMA includes multiple waste management
 facilities, is each facility adequately monitored?

N/A ☒ YES ☐ NO ☐

5. Does the facility have a **GW Sampling and Analysis Plan**?
 Does it adequately address:

YES ☒ NO ☐

- a. Sample collection procedures
 b. Sample preservation and shipment
 c. Analytical procedures
 d. Chain of custody procedures

YES ☒ NO ☐YES ☒ NO ☐YES ☒ NO ☐YES ☒ NO ☐

6. Does the facility have an adequate
GW Quality Assessment Plan Outline?

YES ☒ NO ☐

7. If the company is performing an alternate groundwater monitoring
 program or a partial waiver monitoring program,
 is an approved Sampling and Analysis Plan followed?

N/A ☒ YES ☐ NO ☐

(sampling not observed)

NOTE: Complete the "GW Sampling Procedures Checklist", when observing
 well sampling procedures or co-sampling monitor wells at the facility.

*** An entry in this column indicates explanation/response is needed.

8. Have records been kept of:

- a. Analyses for ground water parameters? YES ☒ NO ☐
- b. Calculations of means and variances? YES ☒ NO ☐
- c. Water surface elevations taken at each well sampling event? YES ☒ NO ☐
- d. Calculations of significant differences? N/A ☐ YES ☒ NO ☐
- e. Analyses of duplicate samples for contamination confirmation? N/A ☐ YES ☒ NO ☐
- f. Analyses of samples taken as a result of implementing the Ground Water Quality Assessment Plan? N/A ☐ YES ☒ NO ☐
- g. Results of Ground Water Quality Assessment Plan? N/A ☐ YES ☒ NO ☐
- (1). Rates of Migration? YES ☒ NO ☐
- (2). Concentration of hazardous waste and/or constituents thereof? YES ☒ NO ☐
- (3). Analyses of quarterly ground water samples? YES ☒ NO ☐
(To be indicated in 2nd quarter of 1988 per the Compliance Plan)
- h. Copies of the **annual reports** of the groundwater monitoring program? YES ☐ NO ☒

None noted for pre-compliance plan interim status assessment monitoring.
Compliance Plan reporting due semi-annually; July 21 and January 21.

9. Are self-reporting data being submitted on the appropriate TWC forms?

YES ☐ NO ☒

- Compliance plan reports not yet due -

+NOTE: Complete remaining checklists as applicable to each Waste Management Area+

Comments: No 1 Lift Station and Equalization Basin were
previously monitored per the Agreed Final Judgment of
November 8, 1985.

The No 1 Lift Station and Equalization Basin ground water
monitoring program is required to commence after the first
full quarter of the Compliance Plan of 2/16/88
(2nd quarter of 1988)

ATTACHMENTS

A-1 Lubrizol closure certification letter of November 10, 1987.
A-2 Lubrizol correspondence of February 1, 1988.
B Conference Memo of April 14, 1988.
C Sample Inspection log.
D Lubrizol Analysis of crankcase oil.
E Facility Map of Solid Waste Management Unit referenced to
Registration Facility Nos.
F Facility Registration.
G Tank System Certification letter of April 19, 1988 from
Law Engineering.
H Lubrizol's Closure Plan.
I Lubrizol closure certification letter of April 6, 1988 Tank B-32.
J-1 Equalization Basin - functioning designation of monitor wells.
J-2 Functioning designation of monitor wells at No. 1 Lift station.
J-3 Map of equalization basin with monitor wells.
J-4 Map of lift station with monitor wells.
K Waste description of F-solvent waste from Waste Analysis Plan.

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

ADDRESS REPLY TO
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158

November 10, 1987

To Whom It May Concern:

Re: The Lubrizol Corporation - Deer Park Plant
I. S. W. Registration No. 30324
Partial Facility Closure, Tank LAB-B

I hereby affirm that the closure procedures given in the attached Closure Plan and correspondence were followed and completed as described in the Plan and its modifications as approved by the Texas Water Commission.

THE LUBRIZOL CORPORATION


J. E. Hodge
J. E. Hodge
General Manager
Houston Plants

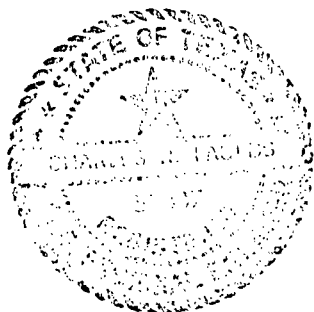
file: H803-87

IV. CLOSURE CERTIFICATION

This is provided to certify that the Tank LAB-B of the Deer Park facility of Lubrizol was closed in accordance with the approved modified Closure Plan. Waste contents of the tank were managed in an off-site recycling facility and associated soils and concrete were removed and disposed of off-site. The tank was washed and rinsed until there was no visible contamination. Rinsewater from the tank cleaning was disposed of through the on-site wastewater facility. Tank rinsewater verification samples were within the 1 mg/L clean-up criteria.

Four representative soil samples were collected beneath and surrounding the former tank location at appropriate locations and depths which extended at least five feet below the bottom of the former excavation. No detectable organic constituents were encountered, and therefore, soil verification samples were within the clean-up criteria. This certification is provided based upon my personal observations at the site, laboratory analytical results, copies of manifests and information provided by Lubrizol.


Charles R. Faulds, P.E.



THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

MAY 27 88

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158
February 1, 1988

Mr. Allan M. Seils, Head
Technical Support Unit, Solid Waste Division
Texas Water Commission
P.O. Box 13087
Capitol Station
Austin, Texas 78711

Re: The Lubrizol Corporation - Deer Park Plant
Solid Waste Registration No. 30324
Closure, Class II Below-grade Concrete Pit

Dear Mr. Seils:

The Lubrizol Corporation is submitting this correspondence concerning the closure of the Class II, Below-grade, concrete pit (the Filter Cake Pit) in response to your letter of September 4, 1987. In that letter you indicated that the analyses of the composite sample indicated barium and chromium remaining in the soils at concentrations of 345 ppm and 39 ppm, respectively. On the basis of these results, the Texas Water Commission's determined that the remaining soils did not meet the criteria for either a Class III or a background (i.e., clean closure) classification. A Class II waste code was thus assigned to the soils remaining at the site of the unit.

The values given for barium and chromium in the closure report were obtained using an analytical method not commonly utilized in RCRA closures. The reported values were for total barium and total chromium, and not the EP Toxicity results typically encountered. While the two analytical methods both use an acidic digestion of the sample by Method 3050 (SW-846), the dilution of the resulting extract prior to analysis by direct aspiration atomic absorption is different. The total metals method used in this closure dilutes the extract to a volume of 100 ml prior to aspiration while the EP Toxicity method dilutes the extract to a volume of two liters before analysis. Thus, the results obtained using the total metals method will be roughly twenty times greater than those from the EP Toxicity procedure on the basis of dilution alone.

The sampling for this closure was performed in 1985, and the total metals procedure was also used for other closures undertaken during that period. Lubrizol has come to

appreciate that while the method may be technically sound, the ensuing results are often unwittingly compared against EP Toxicity values, giving rise to much confusion and misinterpretation. This same problem occurred on the closure of a Class I equalization basin at the Deer Park plant. Ultimately, the Commission agreed that background values of 347 ppm (ave.) barium and verification sample results of 432 ppm (ave.), as measured by the total metals method, were an appropriate demonstration that clean closure had been attained. We offer this information as an example of the magnitude of the results for barium, and by inference chromium, given by this method. Also note that published literature values for naturally occurring barium range from 100 to 3,000 ppm (430 ppm, ave.) and from 1 to 1,000 ppm (100 ppm, ave.) chromium, as measured by that procedure.

In hindsight, it is clear that Lubrizol's choice in using the total metals procedure was a poor one, and one that is not being repeated. We are submitting this additional information, along with copies of correspondence between Lubrizol and the Commission about the above-referenced equalization basin closure, in the hope that you might reconsider the Class II waste classification presently assigned to this unit. Also, I would like to contact you by telephone next week in order to discuss scheduling a meeting at your office to review this, and any other business between your Unit and Lubrizol. If you should have any questions concerning this matter, please feel free to contact me at (713) 479-2851, Ext. 533, or at the letterhead address.

Yours truly,

The Lubrizol Corporation



H. Clark Hopper
Environmental Control Mgr.

Enclosures
cc: J. A. Rexer

H803-88

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
John O. Houchins, Commissioner
B. J. Wynne, III, Commissioner



James K. Rourke, Jr., General Counsel
Michael E. Field, Chief Examiner
Karen A. Phillips, Chief Clerk

Larry R. Soward, Executive Director

November 12, 1987

Mr. Julius Rexer
The Lubrizol Corporation
P. O. Box 158
Deer Park, Texas 77536

Re: Certification of Partial Facility Closure
Industrial Solid Waste Registration No. 30324

Dear Mr. Rexer:

At the request of the Lubrizol Corporation, we have again reviewed your letter dated February 20, 1987 transmitting certification of closure for the Equalization Basin. It appears that the surface impoundment has been properly certified as closed in accordance with the closure plan approved on March 21, 1986.

In regard to the waste classification request included in our letter dated April 7, 1987; Lubrizol submitted a letter, dated August 31, 1987, which included a discussion of the methodology for total barium analysis and the EP toxicity procedure for barium. We concur with your conclusion that the analytical results yielded by the total barium methodology are not indicative of industrial solid waste remaining in place. Therefore, waste characterization is not warranted for the Equalization Basin.

If you have any questions regarding the above, please contact Carol Boucher of the RCRA Ground-water Enforcement Unit at (512) 463-8425.

Sincerely,

Paul H. Lewis for
Samuel B. Pole, Chief
Hazardous and Solid Waste Enforcement Section
Hazardous and Solid Waste Division

cb:CB

cc: Wayne Harry, TWC H&SW Permits Section
TWC Southeast Region, Deer Park office
TWC H&SW Reports and Management Section

Table 17-1. BODY BURDEN AND HUMAN DAILY INTAKE
AND CONTENT IN THE EARTH'S CRUST OF
SELECTED ELEMENTS*

ELEMENT	HUMAN BODY BURDEN (mg 70 kg)	DAILY INTAKE (mg)	EARTH'S CRUST (ppm)
Aluminum	100	36.4	81,300
Antimony	< 90		0.2
Arsenic	< 100	0.7	2
Barium	16	16	400
Boron	< 10	0.01-0.02	16
Cadmium	30	0.018-0.20	0.2
Calcium	1,050,000		36,300
Cesium	< 0.01		1
Chromium	< 6	0.06	200
Cobalt	1	0.3	23
Copper	100	3.2	45
Germanium	Trace	1.5	1
Gold	< 1		0.005
Iron	4,100	15	50,000
Lead	120	0.3	15
Lithium	Trace	2	30
Magnesium	20,000	500	20,900
Manganese	20	5	1,000
Mercury	Trace	0.02	0.5
Molybdenum	9	0.35	1
Nickel	< 10	0.45	80
Niobium	100	0.60	24
Potassium	140,000		25,900
Rubidium	1,200	10	120
Selenium	15	0.06-0.15	0.09
Silver	< 1		0.1
Sodium	105,000		28,300
Strontium	140	2	450
Tellurium	600	0.6	0.002
Tin	30	17	3
Titanium	< 15	0.3	4,400
Uranium	0.02		2
Vanadium	30	2.5	110
Zinc	2,300	12	65
Zirconium	250	3.5	70

* Data derived largely from Schroeder, 1965b.

In industrial situations, inhalation is the most important route of exposure. The background of long experience has led to the recommendation of concentrations in the air of the workplace that are deemed safe for eight-hour exposures. These values, which were adapted as Standards by the Occupational Safety and Health Administration (OSHA), are shown in Table 17-4. In some instances (alkyl lead compounds and thallium) the hazards of skin absorption have been taken into consideration as well in establishing the safe level. Other metals, such as nickel, beryllium, and arsenic, include skin changes as part of their spectrum of toxicity. Topical exposure to certain occupational metals may result in irritation of the skin and eyes or sensitization reactions and provide a route of absorption resulting in

systemic toxicity. Contact with abraded rather than intact skin can produce serious symptoms of toxicity. While parenteral exposure is generally limited to medicinal use, cases of metal splinters being embedded as the result of industrial use are not unknown.

FACTORS INFLUENCING TOXICITY

Before considering the toxic properties of individual metals, it is useful to call attention to certain general properties of this class of elements that have considerable impact on their toxicity. To begin with, they seldom interface with biologic systems in the elemental form. Rather, they occur as discrete compounds that vary considerably in the ease with which they pass across

Arsenic
Barium
Boron
Cadmium
Chromium
Copper
Iron
Lead
Manganese
Selenium
Silver
Uranium
Zinc

* From
men
† Not
: Total
§ Prop

biolog
sociat
biolog
transp
salts a
they a

Table
C

POLLI

Antim
Arseni
Berylli
Bismu
Cadm
Chron
Cobalt
Copp
Iron
Lead
Mang
Molyb
Nickel
Tin
Titan
Vanad
Zinc
Barium
Sama

* Dat
† 1971

Chemical Equilibria in Soils; Lindsay, Williard L.;
Wiley-Interscience Publishing Co., Inc.; 1979, p.7

TABLE 1.1 THE CONTENT OF VARIOUS ELEMENTS IN THE LITHOSPHERE AND IN SOILS

Element	Atomic Weight (g)	Content in Lithosphere (ppm)	Common Range for Soils (ppm)	Selected Average for Soils	
				ppm	Molar Conc. at 10% Moisture log M
Ag	107.87	0.07	0.01-5	0.05	-5.33
Al	26.98	81,000	10,000-300,000	71,000	1.42
As	74.92	5	1-50	5	-3.18
B	10.81	10	2-100	10	-2.03
Ba	137.34	430	100-3,000	430	-1.50
Be	9.01	2.8	0.1-40	6	-2.18
Br	79.91	2.5	1-10	5	-3.20
C	12.01	950		20,000	1.22
Ca	40.08	36,000	7,000-500,000	13,700	0.53
Cd	112.40	0.2	0.01-0.70	0.06	-5.27
Cl	35.45	500	20-900	100	-1.55
Co	58.93	40	1-40	8	-2.87
Cr	52.00	200	1-1,000	100	-1.72
Cs	132.91	3.2	0.3-25	6	-3.35
Cu	63.54	70	2-100	30	-2.33
F	19.00	625	10-4,000	200	-0.98
Fe	55.85	51,000	7,000-550,000	38,000	0.83
Ga	69.72	15	5-70	14	-2.70
Ge	72.59	7	1-50	1	-3.86
Hg	200.59	0.1	0.01-0.3	0.03	-5.83
I	126.90	0.3	0.1-40	5	-3.40
K	39.10	26,000	400-30,000	8,300	0.33
La	138.91	18	1-5,000	30	-2.67
Li	6.94	65	5-200	20	-1.54
Mg	24.31	21,000	600-6,000	5,000	0.21
Mn	54.94	900	20-3,000	600	-0.96
Mo	95.94	2.3	0.2-5	2	-3.68
N	14.01	—	200-4,000	1,400	0.00
Na	22.99	28,000	750-7,500	6,300	0.44
Ni	58.71	100	5-500	40	-2.17
O	16.00	465,000		490,000	2.49
P	30.97	1,200	200-5,000	600	-0.71
Pb	207.19	16	2-200	10	-3.32
Rb	85.47	280	50-500	10	-2.93
S	32.06	600	30-10,000	700	-0.66
Sc	44.96	5	5-50	7	-2.81

(Continued)

CONFERENCE MEMO

Place: Administration Bldg., Lubrizol - Deer Park
Date: April 14, 1988
Company: The Lubrizol Corporation - Deer Park Plant
I.S.W Reg. No. 30324
Subject: Location of soil borings for the #2 Lift Station
RFI Plan

Attendees:	Title	Company
<u>Clark Hopper</u> Clark Hopper	<u>ENV. CONTROL MGR</u>	<u>LUBRIZOL</u>
<u>Julius Rexer</u> Julius Rexer	<u>ENVIRONMENTAL EXP.</u>	<u>LUBRIZOL</u>
<u>Mac Vilas</u> Mac Vilas	<u>Field Investigator</u>	<u>TWC</u>
<u>Wayne R. Harry</u> Wayne Harry	<u>Permit Writer</u>	<u>TWC - Austin</u>

Notes:

Wayne Harry and Mac Vilas of the TWC performed a unit inspection of the No. 2 Lift Station for the purpose of determining exact locations for the soil borings specified in the RFI work plan dated February 24, 1988 for this unit. After discussion with Clark Hopper and Julius Rexer, boring SB-2 will be deleted and replaced by boring SB-2A, which will be located directly north of this unit. Precise locations for the four borings (+/- 1 ft.) were spray painted on the concrete slab surrounding the lift station.

Clark Hopper will determine the feasibility of extracting soil core samples by the use of portable boring equipment for SB-2A.

In addition, the southeast regional office of the TWC shall be afforded the opportunity to observe any activities and to split samples. The regional office will be notified 10 days prior to any boring and sampling to this end. A statement of such notice will be included in an addendum to the RFI work plan.

Lubrizol will also transmit in the addendum to the TWC and EPA-Region VI a revised plot plan detailing the locations (+/- 1 ft.) of the soil borings around the unit.

		SUNDAY	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY	SATURDAY
DATE								
TIME								
INSPECTOR								
WU-3	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-4	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-5	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-6	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-7	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-8	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-9	GAUGE							
	PROBLEMS							
	DATE CORRECT							
WU-10	GAUGE							
	PROBLEMS							
	DATE CORRECT							

J-42 CA-1 WO-6
SAMPLE FORM

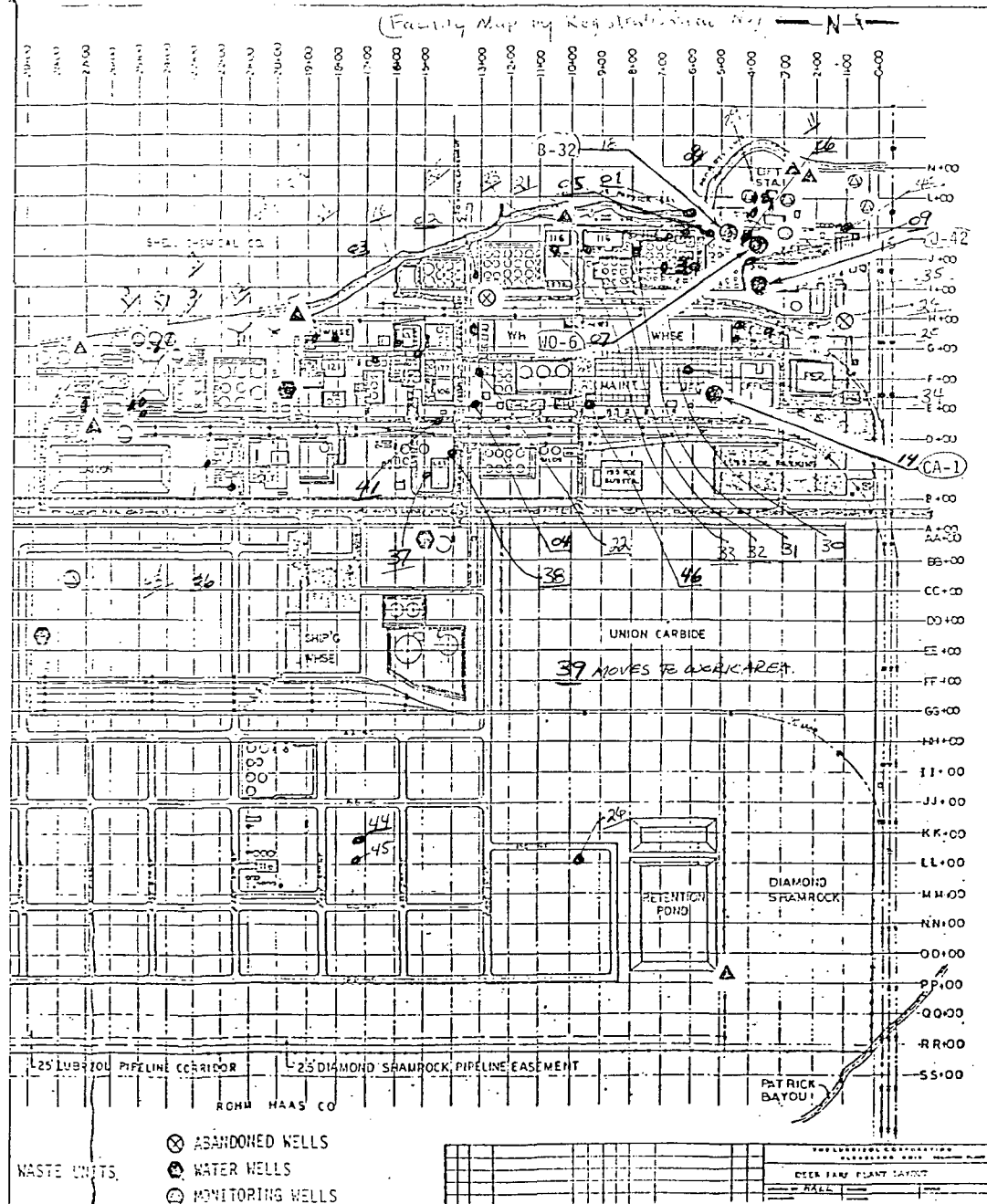
INSTRUCTIONS: INSPECT EACH WASTE TANK OR CONTAINER IN YOUR AREA EVERY DAY FOR THE FOLLOWING TYPE OF PROBLEMS; TOP, SIDES, PIPES, PUMPS, VALVES, FLANGES AND SEAMS FOR CORROSION OR LEAKS, IMPROPER OPERATION OF MONITORING EQUIPMENT, CRACKS OR EROSION TO RETAINING WALLS, OVERFLOWS FROM VENTS OR MANWAYS, IMPROPER LINE-UP OF CUT-OFF, BYPASS OR DRAINAGE SYSTEMS, ACCUMULATION OF WASTE IN THE SUMP OR GENERAL AREA, AND SIMILAR PROBLEMS AT THE WASTE LOADING FACILITIES. ON THIS LOG RECORD ANY PROBLEMS, DATE OF CORRECTIVE ACTION, THE GAUGE READING, NAME OF INSPECTOR, DATE & TIME OF INSPECTION. PLEASE FORWARD THIS COMPLETED FORM TO JULIUS REXER.

08/09/87

ID CODE 03987

CRANKCASE OIL	
ANALYSES	
AG-EP LEACHATE	<0.05
ASH %	
AS-EP LEACHATE	<0.01
BA-EP LEACHATE	<1
B-TOTAL PPM	
N-BUTANOL PPM	
BTU-GROSS LB.	
CARBON CONTENT %	
CA-TOTAL %	
CG-EP LEACHATE	<0.02
CHLORIDE PPM	
CR-EP LEACHATE	<0.05
FE-TOTAL	
FLASH POINT °F	172.00
H-CONTENT %	
WATER %	
HG-EP LEACHATE	<0.005
ISOBUTANOL PPM	
MOISTURE %	
NA-TOTAL %	
PHOSPHORUS	
PB-EP LEACHATE	<0.10
SE-EP LEACHATE	<0.05
SULFUR %	
ZN-EP LEACHATE	
ZN-TOTAL	
PH-UNITS	

James A. Long



*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT*****
* 30324 LUBRIZOL CORP. *

GENERAL INFORMATION:

LUBRIZOL CORP.
DEER PARK PLANT
41 4100 TIDAL ROAD
DEER PARK, TEXAS 77536-0152RECORD TYPE: GENERATOR
REPORT FREQUENCY: A 07-87 P 07-87
REGISTRATION DATE: 07-05-76
LAST CHANGE DATE: 12-18-87
EMPLOYEE GROUP: GREATER THAN 100
STATUS: ACTIVE
EPA ID NUMBER: TXD041067638
STAFF: HJC
HAZ WASTE STATUS: GENERATOR/TRANSPORTER/TSD FACILITY
METHOD TRANSPORT: HIGHWAYCONTACT: JULIUS REIMER
PHONE: 713-479-2051 extension 643
BASIN: 10 SAN JACINTO
SEGMENT: 1006
DISTRICT: 07
REGION:
COUNTY: 101 HARRIS
WCO: 50077

GENERATING SITE LOCATION: 4100 TIDAL ROAD, DEER PARK

DESCRIPTION OF WASTE GENERATING ACTIVITIES:

SEQ SIC CODE DESCRIPTION OF INDUSTRIAL ACTIVITIES
01 2869 INDUSTRIAL ORGANIC CHEMICALS, NEC(A11)
CLASS II waste
Tricell Transport → BFI
McClary R

SOLID WASTE GENERATION SUMMARY:

SEQ	WCC	WASTE DESCRIPTION AND DISPOSITION	CLASS	FORM
001	270640	DIATOMACEOUS EARTH, FILTER MEDIA WITH OIL, PLASTIC & DIRT ON-SITE/OFF-SITE	II	SOLID (PREDOMINANTLY INORGANIC)
002	249950	BIOLOGICAL SLUDGE, DOMESTIC SEWER ON-SITE/OFF-SITE	II	SLUDGE (WATER BASE)
003	279760	PLANT REFUSE, GENERAL MISC. ON-SITE/OFF-SITE	II	SOLID (PREDOMINANTLY INORGANIC)
004	910760	CHEMICALS, ORGANIC (DRAINAGE, FLUSHINGS AND WASHINGS) EPA NOS: D001 F005 U031 U122 U140 U147 U154 U188 U239 F003 NO LONGER GENERATED	II	LIQUID (NON-WATER BASE)
005	900880	SODIUM ALUMINATE - used as commercial product substitute EPA NOS: D002 in WWT flocculation	II	LIQUID (WATER BASE)
006	270240	SULFUR WASTE/SCRAP ON-SITE/SECONDARY USE	II	SOLID (PREDOMINANTLY INORGANIC)
007	111920	OFF-SITE/SOLD FOR RECOVERY stauffer Chemical PARAFFIN, CHLORINATED NO LONGER GENERATED	I	LIQUID (NON-WATER BASE)
008	908260	SCRUBBER WATER EPA NOS: D002	II	LIQUID (WATER BASE)
009	948930	ON-SITE/OFF-SITE SLUDGE, CLARIFIER, CONTAINING TRACE ORGANICS EPA NOS: D001	II	SLUDGE (WATER BASE) - HESCO - crowly LA
010	913860	ON-SITE/OFF-SITE SOLVENTS, NON-HALOGENATED EPA NOS: F005 drums → W06 → HESCO	II	LIQUID (NON-WATER BASE) HESCO
011	910590	ON-SITE/OFF-SITE LAB WASTE, ORGANIC LIQUID - 40% solvents - EPA NOS: D001 Lab A tank → W06 → HESCO	II	LIQUID (NON-WATER BASE) HESCO
012	981690	ON-SITE/OFF-SITE CARBON DISULFIDE (Pac 31) EPA NOS: P022	II	SOLID (PREDOMINANTLY ORGANIC)

C. 17 07...30324 LUBRIZOL CORP.

DW0505
SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
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30524 LUBRIZOL CORP.
SOLID WASTE GENERATION SUMMARY

(CONT)
(CONT):

Waste No	WCC	WASTE DESCRIPTION AND DISPOSITION	CLASS	FORM
013	914990	ON-SITE/OFF-SITE ALCOHOL, N-BUTYL EPA NOS: U03T	1H	LIQUID (NON-WATER BASE)
014	914250	ON-SITE/OFF-SITE ALCOHOL, ISOBUTYL EPA NOS: U140	1H	LIQUID (NON-WATER BASE)
015	911080	ON-SITE/OFF-SITE METHANOL EPA NOS: U154	1H	LIQUID (NON-WATER BASE)
016	913640	ON-SITE/OFF-SITE PHENOL EPA NOS: U188	1H	LIQUID (NON-WATER BASE)
017	910030	ON-SITE/OFF-SITE XYLENE/XYLOL EPA NOS: U239	1H	LIQUID (NON-WATER BASE)
018	970490	ON-SITE/OFF-SITE SOIL, CONTAMINATED EPA NOS: F022 U03T U140 U147 U154 U188 U189 U239	1H	SOLID (PREDOMINANTLY INORGANIC)
019	915490	ON-SITE/OFF-SITE ORGANIC LIQUID AND WATER EPA NOS: D00T	1H	LIQUID (NON-WATER BASE)
020	115490	ON-SITE/OFF-SITE ORGANIC LIQUID AND WATER EPA NOS: D00T	1	LIQUID (NON-WATER BASE)
021	915530	OIL, CRANKCASE - Lubricant letter of 10/9/87 - EPA NOS: D00S Attempt to reclassify as N/A	1H	LIQUID (NON-WATER BASE)
022	149990	ON-SITE/OFF-SITE/SOLD FOR RECOVERY ION EXCHANGE RESIN EPA NOS: D00S	1	SLUDGE (WATER BASE)
023	179390	ON-SITE/OFF-SITE ASBESTOS INSULATION EPA NOS: D00S	1	SOLID (PREDOMINANTLY INORGANIC)
024	940370	ON-SITE/OFF-SITE FILTER CAKE MEDIA EPA NOS: D00S	1H	SLUDGE (WATER BASE)
025	972660	ON-SITE/OFF-SITE PHOSPHOROUS PENTASULFIDE EPA NOS: U189	1H	SOLID (PREDOMINANTLY INORGANIC)
026	171770	ON-SITE/OFF-SITE SAND, SANDBLASTING EPA NOS: F005	1	SOLID (PREDOMINANTLY INORGANIC)
027	906290	ON-SITE/OFF-SITE WASHWATER FROM EQUIPMENT WASHING EPA NOS: F005 Satellite drums -> W06	1H	LIQUID (WATER BASE)

HAZARDOUS WASTE DESCRIPTION

D001 IGNITABLE WASTE
D002 CORROSIVE WASTE
D005 BARIUM
F003 SPENT NON-HALOGENATED SOLVENTS: XYLENE, ACETONE, ETHYL ACETATE,
ETHYL BENZENE, ETHYL ETHER, METHYL ISOBUTYL KETONE, N-BUTYL ALC

HAZARD CODES	HAZARD CODES	HAZARD CODES	HAZARD CODES	HAZARD CODES	
IGNIT	CORR	EP TOX	REACT	ACUTE	TOX
X					
	X				
		X			
X					

HESCO

Texas Ecology
Robstown, TX
BFI -

Rollins

Rollins

DW0505

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
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30524 LUBRIZOL CORP.
SOLID WASTE GENERATION SUMMARY

(CONT)
(CONT):

HAZARDOUS WASTE DESCRIPTION

FO03 OHOL, CYCLOHEXANONE, AND METHANOL; ALL SPENT SOL. MIX/BLENDS CONTAINING, BEFORE USE, ONLY THE ABOVE SPENT NON-HALOG. SOL.; AND ALL SPENT SOL. MIX/BLENDS CONTAINING, BEFORE USE, ONE OR MORE OF THE ABOVE NON-HALOG. SOL. AND, A TOTAL OF 10% OR MORE (BY VOL) OF ONE OR MORE OF THOSE SOLS. LISTED IN F001, F002, F004, AND F005; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

FO05 THE FOLLOWING SPENT NON-HALOGENATED SOLVENTS: TOLUENE, METHYL ETHYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, BENZENE, 2-ETHOXYETHANOL, AND 2-NITROPROPANE; ALL SPENT SOLV ENT MIXTURES/BLENDS CONTAINING, BEFORE USE, A TOTAL OF TEN PERCENT OR MORE (BY VOLUME) OF ONE OR MORE OF THE ABOVE NON-HALOGENATED SOLVENTS OR THOSE SOLVENTS LISTED IN F001, F002, OR F004; AND STILL BOTTOMS FROM THE RECOVERY OF THESE SPENT SOLVENTS AND SPENT SOLVENT MIXTURES.

P022 CARBON DISULFIDE OR CARBON BISULFIDE

003T T-BUTANOL OR N-BUTYL ALCOHOL

U122 FORMALDEHYDE OR METHYLENE OXIDE

U140 ISOBUTYL ALCOHOL OR 1-PROPANOL, 2-METHYL

U147 2,5-FURADIONE OR MALEIC ANHYDRIDE

U154 METHANOL OR METHYL ALCOHOL

U188 BENZENE, HYDROXY- OR PHENOL

U189 PHOSPHORUS SULFIDE OR SULFUR PHOSPHIDE

U239 BENZENE, DIMETHYL- OR XYLENE

HAZARD CODES
EP TOX REACT ACUTE TOX

IGNIT CORR

X

X

X

X

X

X

X

X

X

SOLID WASTE MANAGEMENT FACILITIES SUMMARY:
SEQ DESCRIPTION AND STATUS

01 TANK (SUB-SURFACE)
INACTIVE
DISTRICT: 07

COUNTY: 101 HARRIS
BASIN: 10 SAN JACINTO
SEGMENT: 1006

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

01-64
10-87

DATE RECORDED:

FACILITY USE: STORAGE

001 II DIATOMACEOUS EARTH, FILTER MEDIA WITH OIL, PLASTIC & GRY
002 II BIOLOGICAL SLUDGE, DOMESTIC SEWER
006 II SULFUR WASTE/SCRAP

FACILITY DESCRIPTION: REINFORCED CONCRETE BOX
COMMENTS: CLOSURE PLAN SUBMITTED

→ filled in with clay soil -
- closure sampling in 1985 -
- Lubrizol letter of 12/1/88 -

DW0505
SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
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30324 LOBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

02 BULK STORAGE AREA (ENCLOSED)
ACTIVE
DISTRICT: 07

COUNTY: 101 HARRIS
BASIN: 10 SAN JACINTO
SEGMENT: 1006

FACILITY USE: STORAGE
003 11 PLANT REFUSE, GENERAL WISC.
FACILITY DESCRIPTION: 40 CU. YD. STEEL BINS

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 08-72
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED: DATE RECORDED:

03 TANK (SURFACE)
ACTIVE
DISTRICT: 07

COUNTY: 101 HARRIS
BASIN: 10 SAN JACINTO
SEGMENT: 1006

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS
009 1H SLUDGE, CLARIFIER, CONTAINING TRACE ORGANICS
FACILITY DESCRIPTION: 4849 GAL., CARBON STEEL VESSEL C-61

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 02-73
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED: DATE RECORDED:

04 TANK (SURFACE)
ACTIVE

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS
019 1H ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: TANK W-1 CARBON STEEL

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED: CAPACITY: 6,000 GAL.
ELEVATION: DATE RECORDED:

05 TANK (SURFACE)
ACTIVE

INACTIVE
(failed tank assessment)
- tank leak -

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS
019 1H ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: FIBERGLASS VESSEL - W-3

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED: CAPACITY: 13,709 GAL.
ELEVATION: DATE RECORDED:

DW0505
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30324 LUBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

06 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 8408 GAL
ELEVATION:

FACILITY USE: --STORAGE FOR LESS THAN 90 DAYS--

019 1M ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: CARBON STEEL VESSEL - W-05

07 TANK (SURFACE)
INACTIVE

ACTIVE

- Permitted -

FACILITY USE: STORAGE

010 1M SOLVENTS, NON-HALOGENATED
011 1M LAB WASTE, ORGANIC LIQUID
019 1M ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER
021 1M OIL, CRACKCASE

FACILITY DESCRIPTION: CARBON STEEL VESSEL W-6

08 TANK (SURFACE)
ACTIVE

INACTIVE

(Failed tank assessment)

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10,000 GAL
ELEVATION:

FACILITY USE: --STORAGE FOR LESS THAN 90 DAYS--

019 1M ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: CARBON STEEL VESSEL T-19P

09 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 4500 GAL
ELEVATION:

FACILITY USE: --STORAGE FOR LESS THAN 90 DAYS--

G 17

DW0505
SEQUENCE: COMPANY DISTRICT
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30324 LOBATOZ CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
019 IN ORGANIC LIQUID AND WATER
020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: FIBERGLASS T19-U

10 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10,000 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE ✓ V.H.
020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL VESSEL, T-19X1

11 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 12,000 GAL
ELEVATION:

DATE RECORDED:

W.W.T.S.
FACILITY USE: PROCESSING continuous flow separator
019 IN ORGANIC LIQUID AND WATER
020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL T-19Y

12 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 16000 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: PROCESSING
020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL T-20X
COMMENTS: PROCESS TANK

13 TANK (SURFACE)
INACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE: 10-87
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 12000
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS—
005 IN SODIUM ALUMINATE

ACTIVE

DWO505

SEQUENCE: COMPANY DISTRICT
COMPANY NAME*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
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DATE 05/18/0330524 COBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
FACILITY DESCRIPTION: CARBON STEEL T-25X
COMMENTS: EXEMPTED FROM PERMITTING14. TANK (SURFACE)
ACTIVE

- Permitted

FACILITY USE: STORAGE
008 IN SCRUBBER WATER

FACILITY DESCRIPTION: DERRAME 470 CA-T

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:- Permit Capacity 17,609
CAPACITY: 18251
ELEVATION:

DATE RECORDED:

15. TANK (SURFACE)
ACTIVE

- Permitted -

FACILITY USE: STORAGE
008 IN SCRUBBER WATER

FACILITY DESCRIPTION: DERRAME 470 J-2

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:Permit capacity 9000 gal
CAPACITY: 10000 GAL
ELEVATION:

DATE RECORDED:

16. TANK (SURFACE)
ACTIVEFACILITY USE: STORAGE FOR LESS THAN 90 DAYS -
019 IN ORGANIC LIQUID AND WATER
020 T ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL W-6LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:CAPACITY: 12126 GAL
ELEVATION:

DATE RECORDED:

17. TANK (SURFACE)
CLOSED

ERM Report w/ Lubrizol letter of 6/23/87

FACILITY USE: STORAGE
019 IN ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL EFFLUENT TANK CAR SMELLLATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE: 03-86
DATE CLOSED: 03-87
SUBJECT TO PERMIT:
DEED REQUIRED:CAPACITY: 6,000 GAL.
ELEVATION:

DATE RECORDED:

DWO505

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INDUSTRIAL SOLID WASTE SYSTEM
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DATE 05/02/8830324 LOBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS18 TANK (SURFACE)
~~INACTIVE~~

CLOSED

(TWC letter of 4/25/88)

FACILITY USE: STORAGE

010 IN SOLVENTS, NON-HALOGENATED

011 IN LAB WASTE, ORGANIC LIQUID

021 IN OIL, CRACKCASE

FACILITY DESCRIPTION: CARBON STEEL B-32

COMMENTS: CLOSURE PLAN SUBMITTED

LATITUDE:

LONGITUDE:

SURFACE AREA:

DATE OPENED:

DATE INACTIVE: 10-87

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

CAPACITY: 15,076 GAL

ELEVATION:

DATE RECORDED:

19 BULK STORAGE AREA (ENCLOSED)
ACTIVE

LATITUDE:

LONGITUDE:

SURFACE AREA:

DATE OPENED:

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

CAPACITY:

ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE

002 II BIOLOGICAL SLUDGE, DOMESTIC SEWER

FACILITY DESCRIPTION: 3-30 CU. YD. STEEL BINS

20 CONTAINER STORAGE AREA
ACTIVE

LATITUDE:

LONGITUDE:

SURFACE AREA:

DATE OPENED:

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

CAPACITY:

ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE

012 IN CARBON DISULFIDE

013 IN ALCOHOL, N-BUTYL

014 IN ALCOHOL, ISOBUTYL

015 IN METHANOL

016 IN PHENOL

017 IN XYLENE/XYLOL

018 IN SOIL, CONTAMINATED

FACILITY DESCRIPTION: DRUM STORAGE LESS THAN 90 DAYS

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30324 LUBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

21 BULK STORAGE AREA
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 30 CU. YD.
ELEVATION:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS

024 11 FILTER CAKE MEDIA

FACILITY DESCRIPTION: 1 STEEL BIN, NO. WC3C

22 BULK STORAGE AREA
ACTIVE

(Waste Cake, location 3)

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

FACILITY USE: STORAGE

001 11 DIATOMACEOUS EARTH, FILTER MEDIA WITH OIL, PLASTIC & DIRT

002 11 BIOLOGICAL SLUDGE, DOMESTIC SEWER

006 11 SULFUR WASTE/SCRAP

FACILITY DESCRIPTION: 2 - 30 CU. YD. STEEL BINS, NOS. WC2A AND WC2B

23 BULK STORAGE AREA
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

FACILITY USE: STORAGE

001 11 DIATOMACEOUS EARTH, FILTER MEDIA WITH OIL, PLASTIC & DIRT

002 11 BIOLOGICAL SLUDGE, DOMESTIC SEWER

006 11 SULFUR WASTE/SCRAP

FACILITY DESCRIPTION: 2 - 30 CU. YD. STEEL BINS, NOS. WC3A AND WC3B

24 BULK STORAGE AREA
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

FACILITY USE: STORAGE

001 11 DIATOMACEOUS EARTH, FILTER MEDIA WITH OIL, PLASTIC & DIRT

DN0505
SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
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30324 LOBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
002 11 BIOLOGICAL SLUDGE, DOMESTIC SEWER
006 11 SLURRY WASTE/SCRAP

FACILITY DESCRIPTION: 3 - 30 CU. YD. STEEL BINS, NOS. WC1A, WC1B AND WC1C

25 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 16,521 GAL
ELEVATION:

FACILITY USE: STORAGE

019 11 ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: TANK RA-3, CARBON STEEL

- #2 Lift Station Skimmings -

26 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10,066 GAL
ELEVATION:

FACILITY USE: STORAGE

020 1 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: TANK MD-4, CARBON STEEL

Skimmings from API Separator

27 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10,000 GAL
ELEVATION:

FACILITY USE: STORAGE

020 1 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: TANK MD-5, CARBON STEEL

28 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 5,000 GAL
ELEVATION:

FACILITY USE: STORAGE

019 11 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: FIBERGLASS, TANK MD-2

< 90 day

- liquid scraps from units, also alcohols etc -

L 17

DW0505
SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

PAGE 10005
DATE 03/07/00

30324 LORITZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

29 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 1,000 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER #1 Lift station bottom
FACILITY DESCRIPTION: FIBERGLASS, TANK NO. RA-10

30 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 1,113 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. WD-8

31 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 2,110 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. FD-21

32 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 1,113 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. WD-9

DW0505
SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

PAGE 14007
DATE 05/02/03

30324 LUBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

33 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 1,064 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. 40-10

34 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 2,695 GAL.
ELEVATION:

DATE RECORDED:

(NIT or 290 day)
FACILITY USE: STORAGE
019 IM ORGANIC LIQUID AND WATER - dump pot for skimmer waste -
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. 88-3

35 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10,567 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. 17C-1

36 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 2,110 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS - (dump pot)
019 IM ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. P-25

040505
SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

PAGE 1/003
DATE 05/02/03

30524 LUBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

37 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 345 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS (210% solvents)
011 IN LAB WASTE, ORGANIC LIQUID
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. LAB-A

38 TANK (SUB-SURFACE)
CLOSED

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:

CAPACITY: 563 GAL.
ELEVATION:

SUBJECT TO PERMIT:
DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS
011 IN LAB WASTE, ORGANIC LIQUID
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. LAB-B
COMMENTS: CLOSURE PLAN SUBMITTED

39 BULK STORAGE AREA (ENCLOSED)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
023 1 ASBESTOS INSULATION
FACILITY DESCRIPTION: 75 CU. YD. STEEL CONTAINER

40 MISCELLANEOUS STORAGE CONTAINERS
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 250 GAL.
ELEVATION:

DATE RECORDED:

(290 day)
FACILITY USE: STORAGE
019 IN ORGANIC LIQUID AND WATER
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL, TANK NO. 156 W/O

DU0505

SEQUENCE: COMPANY DISTRICT
COMPANY NAME*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORTPAGE 10009
DATE 05/02/8050324 LUBRIZOL CORP. (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS41 CONTAINER STORAGE AREA
ACTIVELATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE

022 1 ION EXCHANGE RESIN

FACILITY DESCRIPTION: 55 GAL. METAL DRUMS 30 yd³ bins42 CONTAINER STORAGE AREA
ACTIVELATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:CAPACITY: 30 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS

025 1M PHOSPHOROUS PENTASULFIDE

FACILITY DESCRIPTION: FIBER DRUMS

43 CONTAINER STORAGE AREA
ACTIVELATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS

019 1M ORGANIC LIQUID AND WATER

020 1 ORGANIC LIQUID AND WATER

FACILITY DESCRIPTION: 250 GALLON, CARBON STEEL CONTAINER, P/P - W/O

44 MISCELLANEOUS STORAGE CONTAINERS
ACTIVELATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:CAPACITY: 55 GAL.
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE FOR LESS THAN 90 DAYS

010 1M SOLVENTS, NON-HALOGENATED

FACILITY DESCRIPTION: MAINTENANCE EXEMPT SATELLITE FAC. USED IN THE PAINT AREA



LAW ENGINEERING

GEOTECHNICAL ENVIRONMENTAL
& CONSTRUCTION MATERIALS
CONSULTANTS

April 19, 1988

Lubrizol Petroleum Chemicals Company
12801 Bay Area Boulevard
Pasadena, Texas 77507-1397

ATTENTION: Mr. Julius Rexar

SUBJECT: Hazardous Waste Tank System Certification
Lubrizol Petroleum Chemicals Company
Deer Park Plant
Law Engineering Project No. HT-2329-87N

Gentlemen:

The attached statement of certification for hazardous waste storage tank systems at Lubrizol's Deer Park plant is for your records until we have completed our reports on the individual tanks. Transmitted with this letter are certification reports for two tanks, P-25 and C-61. The reports for the remaining tanks will follow the same general format. We apologize for not having completed all reports prior to your plant audit. The delay is a result of the great number of projects we obtained during the 4th quarter of 1987.

If we can be of any further assistance regarding this matter, please do not hesitate to call.

Sincerely,

LAW ENGINEERING

D. E. Hendrix
D. E. Hendrix, P.E.

Materials Engineering and Corrosion Specialist

Richard A. Pearce
Richard A. Pearce, P.E.
Chief Engineer

DEH/RAP/cnb

CERTIFICATION STATEMENT

HAZARDOUS WASTE STORAGE TANK SYSTEMS
LUBRIZOL PETROLEUM CHEMICALS COMPANY
DEER PARK PLANT

LAW ENGINEERING PROJECT NO. HT-2329-87N

The hazardous waste tank systems at Lubrizol Petroleum Chemical Company's Deer Park plant were inspected by Law Engineering prior to January 12, 1988. Based on our visual survey and ultrasonic wall thickness inspection of the tanks listed below, information supplied to us by Lubrizol, our design review, and our engineering experience with similar projects, it is Law Engineering's opinion the following tank systems listed below, including their ancillary equipment, are currently not leaking and are suitable for service under normal conditions with the present hazardous waste. Hazardous waste tanks WO-3 and T-19P were inspected and found to be not certifiable.

TANK

WO-6
CA-1
J-42
C-61
P-25
LAB-A
WO-1
T-19W
H-6
RA-3
WO-2

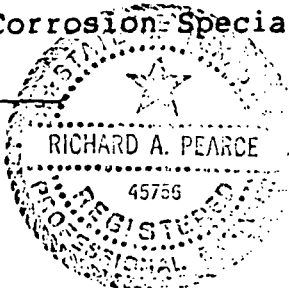
Sincerely,

LAW ENGINEERING

D. E. Hendrix
D. E. Hendrix, P.E.

Materials Engineering and Corrosion Specialist

Richard A. Pearce
Richard A. Pearce, P.E.
Chief Engineer



Facility Closure Plan, Deer Park Plant
July, 1987

CLOSURE PLAN

PART 1
METHOD OF CLOSURE

A. Hazardous Waste Management Units

Part A } Part B } Max. Reported Capacity	1 Permitted Capacity	Number of tanks - 4. All tanks rest above-ground on concrete pads.
10,000	9,000	a. J-42
* 19,543	17,600	b. CA-1
25,320	22,800	c. WO-6
* 15,106	N/A	d. B-32
-Total- 69,969	49,400 (gallons)	

- CLOSED 4/6/89, (TWC letter of 4/25/89) -

B-32
* Part B valve 15,106 g
Part A = 15,076 g
CA-1
* Part B = 18,000 g
Part A = 19,543 g
Reg. = 15,231 g

2. Maximum capacity of tanks - 51,506 gallons total [?]
what is the basis for this Number? [?]
3. Maximum expected inventory at time of closure - 38,630 gallons.
- why not use 100% - ?
4. Ancillary equipment requiring decontamination -
associated pumps, valves and piping.

5. Schedule for closure

- a. Closure activities will begin January 1, 1989,
or 30 days after final receipt of waste,
whichever is later.

Facility Closure Plan, Deer Park Plant
July, 1987

CLOSURE PLAN

PART 2
COST ESTIMATES

For the basis of estimating the cost of completing the activities described in this plan, it is assumed that all activities are performed by third parties, and that all waste water generated as a result of washing and rinsing the units will be treated off-site.

(What about waste in the tank?) ←

? why not 100%

1. Off-site disposal of remaining waste; 75% of the units' total capacity (51,500 gallons) MY 31,125
2. Disposal of decontaminated equipment 1,000
3. Off-site disposal of wash/rinse water generated (approx. 3 times tank capacity) 150,000 gallons 37,500

(approx. 3 times tank capacity) $(150,000) \times \$0.25/\text{gallon} =$

Approximate costs, approximately 640

$(640 \text{ hrs}) \times \$46.875/\text{hour} = 30,000$

5. Certification of closure

\$.....10,000

6. Analyses

\$.....8,000

TOTAL \$ 118,000

The Lubrizol Corporation has elected to use the financial
test to comply with the financial responsibility requirements
for liability coverage and closure and post-closure care.

The annually updated documents demonstrating the required

FACILITY CLOSURE

PLAN

THE LUBRIZOL CORPORATION

DEER PARK PLANT

41 TIDAL ROAD

DEER PARK, TEXAS 77530

INDUSTRIAL SOLID WASTE REGISTRATION NO. 124

JULY 15, 1987

Amending the Plan of April 1, 1987

GENERAL INFORMATION

1. EPA Facility ID Number.....TXD04 06 00 00
2. Texas Water Commission I.S.W. Number.....30324
3. Facility Address.....41 Tidal Road
Deer Park, Texas 77536
4. Mailing Address.....P.O. Box 158
Deer Park, Texas 77536
5. Business Address.....29400 Lakeland Blvd.
Wickliffe, Ohio 44092
6. Facility Contact.....Mr. Julian Rexer
RCRA Coordinator
(713) 479-2851 Ext. 643

This report is in two parts. The first part outlines the steps that will be taken to close the hazardous waste management unit at the facility. The second part gives the estimated cost for closure of the units.

Facility Closure Plan, Deer Park Plant
July, 1987

sectional drawings showing the sample locations will be submitted with the final report. Lubrizol personnel and/or its contractor will perform the sampling. Analysis of the soil samples will be performed by an independent laboratory service. Chain of Custody documentation will accompany all samples to preserve the integrity of the sampling handling. The samples taken for any given unit will be split into two groups. The first group will be extracted using EPA Method 5020 or Method 5030 (USEPA SW-846, 2nd Ed.) and analyzed using EPA Method 8240 (USEPA SW-846) for the volatile organic constituents listed in Table 1. The second group of soil samples will be extracted using EPA Method 3540 (USEPA SW-846) or Method 3550 (USEPA SW-846), then analyzed using EPA Method 8270 for the base/neutral extractable organic constituents.

Method 8270 for the PCBs, listed in Table 2, and the acid extractables listed in Table 3. The anticipated detection limits for soil samples by these methods is expected to be five milligrams per liter (5 mg/l) or less. The Executive Director of the Texas Water Commission will be notified if the proposed detection limits cannot be achieved by the laboratory performing the analyses. The surrounding soils shall be considered uncontaminated if the analytical results indicate less than detection limits, or are not significantly different from the background analyses at the 99% confidence level, for each constituent listed in Tables 1, 2 and 3.

5. Schedule for closure

- a. Closure activities will begin January 1, 2019, or 30 days after final receipt of wastes, whichever ever is later.
- b. Estimated time required to complete closure activities - 180 days or less, from date of notification of the TWC.

B. Method of closure

The hazardous waste management units will be removed from service and a clean-closure of the sites performed in accordance with the procedures described in the plan.

All waste materials remaining in the unit will be removed to an approved off-site treatment, storage, and disposal facility. Retreatment of the waste prior to removal is

Facility Closure Plan, Deer Park Plant
July, 1987

not required. First, the tanks will be visually inspected to confirm the removal of the wastes. The tanks and ancillary equipment will then be decontaminated by washing with water, detergent and steam as described in Section C of this plan. The decontaminated tank and piping will then be dismantled and disposed in an approved, off-site facility if of no functional value to Lubrizol, or returned to the plant's equipment inventory. The surrounding soils will be evaluated ~~if not~~ protected by secondary containment, and if contaminated with waste from the unit, removed. Details of the soils evaluation are given in Section 4 of this plan. If necessary, clean fill soil will be used to restore the site to grade. The closure of the site will be completed by the completion of closure by the end of the year.

#

~~Following the completion of the closure activities,~~
will be made to have an independent, registered Professional
Engineer visit the site, review all activities performed and
analytical data obtained, and certify that closure was
performed in accordance with this Plan. Upon completion of
all activities, a final report will be submitted to the Texas
Water Commission by The Lubrizol Corporation and the
independent engineer as described further in this plan. The
TWC Southeast Regional Office will be notified at least ten
(10) days prior to initiation of closure activities and will
be afforded the opportunity to observe the activities and
split samples.

Facility Closure Plan, Deer Park Plant July, 1987

C. Decontamination Procedure

Prior to washing, any wastes remaining in the tanks and the associated equipment will be removed to an approved off-site treatment, storage or disposal facility. A visual inspection of the tanks will be performed to verify removal of the wastes. The tanks and ancillary equipment will then be decontaminated by washing with water, detergent, and steam. Following the wash, the tank systems will be rinsed with clear water. The wash and rinse steps will be repeated as often as necessary until the rinsings show no visible evidence of contamination. The final rinse will then be sampled and analyzed for verification of compliance with EPA Method 8160-A, 30-40, 2nd Ed., 100 mg/L, 50 mg/L, 10 mg/L, and 1 mg/L.

100 mg/L, 30-40, 2nd Ed., 100 mg/L, 50 mg/L, 10 mg/L, and 1 mg/L

Method 8270 (USEPA SW-846) for the base/neutral extractables given in Table 2 and the acid extractables listed in Table 3. The anticipated lower limits of detection for each method are given below:

Method 8240, volatile organics.....25 micrograms/liter
Method 8270, base/neutral extr's.....70 micrograms/liter
Method 8270, acid extractables.....200 micrograms/liter

The TWC will be notified if the proposed detection levels cannot be achieved by the laboratory performing the analysis. Decontamination shall be considered complete when the results of the rinse analysis indicate the presence of one milligram per liter (1.0 mg/l) or less of each of the constituents listed in Tables 1, 2 and 3. All wash and rinse

Facility Closure Plan, Deer Park Plant July, 1987

waters will be disposed off-site at an approved waste disposal facility or at the plant's waste water treatment system. The total volume of washings and rinsings is not estimated to exceed three times the capacity of the tanks, or approximately 150,000 gallons. All decontamination steps will be performed by Lubrizol personnel or its contractors. Analysis of the final rinseate will be performed by an independent laboratory service. Chain of Custody documentation will accompany all samples to preserve the integrity of the sample handling.

4. Evaluation of Surrounding Soils

Following removal of the tanks, a signed agreement will be

surrounding areas will be performed by an independent, registered Professional Engineer to determine if additional evaluation of the surrounding soils is necessary. Soil studies may not be needed for some of the units which have had secondary containment since installation. Any necessary samples will be collected from beneath and surrounding the tanks at appropriate locations and depths and which extend at least three to five feet below the bottom elevation of the tank. Additionally, a minimum of two background samples will be collected from suitable locations and depths near the tanks. The regional office of the Texas Water Commission will be given the opportunity to assist in the selection of the locations for the background samples. *↳ (which tanks does this include)*

Facility Closure Plan, Deer Park Plant
July, 1987

C. Certification Report

Upon completion of all closure activities, certification will be submitted by both The Lubrizol Corporation and the independent registered Professional Engineer that closure has been completed in accordance with the approved closure plan.

In addition, a final engineering report will be submitted containing a summary of the activities performed during the closure, and the analytical results, including the laboratory's quality assurance/quality control results of all sampling.

D. Post-closure Care

Post-closure care will not be required.

by removal of hazardous wastes from the inventory as described
by this plan.

± 300000

Facility Closure Plan, Deer Park Plant
July, 1987

financial responsibility, dated March 25, 1987, have been
previously submitted to the Texas Water Commission

3. 20

in states where EPA is not administering the program. For example, in California, where the CAA rates 100 and 100, the owner of a facility is financially responsible for the closure or post-closure costs. In the other facilities through the use of a test equivalent to the one used in the financial test. Facilities in states where EPA is not administering the current closure and/or post-closure costs are required to provide the following information for each facility:

NO.	DATE	NAME
1	10/10/50	JOHN D. SMITH
2	10/11/50	MARY E. JONES
3	10/12/50	WILLIAM R. BROWN
4	10/13/50	CHARLES F. WHITE
5	10/14/50	EDWARD G. BLACK
6	10/15/50	FRANK L. GREEN
7	10/16/50	ALICE M. HARRIS
8	10/17/50	ROBERT K. MILLER
9	10/18/50	JOHN A. WILSON
10	10/19/50	MARGARET N. DAVIS
11	10/20/50	THOMAS H. GARCIA
12	10/21/50	HELEN S. MARTIN
13	10/22/50	JOHN P. THOMAS
14	10/23/50	MICHAEL J. ROSS
15	10/24/50	SARAH L. KING
16	10/25/50	DAVID R. WOOD
17	10/26/50	JANE E. BAKER
18	10/27/50	JOHN F. HILL
19	10/28/50	MARY K. SCOTT
20	10/29/50	WILLIAM M. ADAMS
21	10/30/50	CHARLES D. NELSON
22	10/31/50	EDWARD J. CARTER
23	11/01/50	FRANK R. PERKINS
24	11/02/50	ALICE L. ROBERTS
25	11/03/50	ROBERT M. TURNER
26	11/04/50	JOHN A. PHILLIPS
27	11/05/50	MARGARET N. CRANE
28	11/06/50	THOMAS H. HENDRICKS
29	11/07/50	HELEN S. COOPER
30	11/08/50	JOHN P. REED
31	11/09/50	MICHAEL J. BROWN
32	11/10/50	SARAH L. GREEN
33	11/11/50	DAVID R. WHITE
34	11/12/50	JANE E. BLACK
35	11/13/50	JOHN F. HARRIS
36	11/14/50	MARY K. MILLER
37	11/15/50	WILLIAM M. WILSON
38	11/16/50	CHARLES D. DAVIS
39	11/17/50	EDWARD J. GARCIA
40	11/18/50	FRANK R. MARTIN
41	11/19/50	ALICE L. THOMAS
42	11/20/50	ROBERT M. ROSS
43	11/21/50	JOHN A. KING
44	11/22/50	MARGARET N. WOOD
45	11/23/50	THOMAS H. BAKER
46	11/24/50	HELEN S. HILL
47	11/25/50	JOHN P. SCOTT
48	11/26/50	MICHAEL J. ADAMS
49	11/27/50	SARAH L. NELSON
50	11/28/50	DAVID R. CARTER
51	11/29/50	JANE E. PERKINS
52	11/30/50	JOHN F. ROBERTS
53	12/01/50	MARY K. TURNER
54	12/02/50	WILLIAM M. PHILLIPS
55	12/03/50	CHARLES D. CRANE
56	12/04/50	EDWARD J. HENDRICKS
57	12/05/50	FRANK R. COOPER
58	12/06/50	ALICE L. REED
59	12/07/50	ROBERT M. BROWN
60	12/08/50	JOHN A. GREEN
61	12/09/50	MARGARET N. WHITE
62	12/10/50	THOMAS H. BLACK
63	12/11/50	HELEN S. HARRIS
64	12/12/50	JOHN P. MILLER
65	12/13/50	MICHAEL J. WILSON
66	12/14/50	SARAH L. DAVIS
67	12/15/50	DAVID R. GARCIA
68	12/16/50	JANE E. MARTIN
69	12/17/50	JOHN F. THOMAS
70	12/18/50	MARY K. ROSS
71	12/19/50	WILLIAM M. KING
72	12/20/50	CHARLES D. WOOD
73	12/21/50	EDWARD J. BAKER
74	12/22/50	FRANK R. HILL
75	12/23/50	ALICE L. SCOTT
76	12/24/50	ROBERT M. ADAMS
77	12/25/50	JOHN A. NELSON
78	12/26/50	MARGARET N. CARTER
79	12/27/50	THOMAS H. PERKINS
80	12/28/50	HELEN S. ROBERTS
81	12/29/50	JOHN P. TURNER
82	12/30/50	MICHAEL J. PHILLIPS
83	12/31/50	SARAH L. CRANE
84	1/01/51	DAVID R. HENDRICKS
85	1/02/51	JANE E. COOPER
86	1/03/51	JOHN F. REED
87	1/04/51	MARY K. BROWN
88	1/05/51	WILLIAM M. GREEN
89	1/06/51	CHARLES D. WHITE
90	1/07/51	EDWARD J. BLACK
91	1/08/51	FRANK R. HARRIS
92	1/09/51	ALICE L. MILLER
93	1/10/51	ROBERT M. WILSON
94	1/11/51	JOHN A. DAVIS
95	1/12/51	MARGARET N. GARCIA
96	1/13/51	THOMAS H. MARTIN
97	1/14/51	HELEN S. THOMAS
98	1/15/51	JOHN P. ROSS
99	1/16/51	MIC

42-48 The Eastern Co. Corp.

NY 100-107638 The Lummox Corp.

1. The first step is to identify the problem or question that needs to be answered. This involves understanding the context and the specific requirements of the task.

the 1990s, the number of people in the world who are under 15 years of age is expected to increase by 1.5 billion, and the number of people over 65 years of age is expected to increase by 1 billion. The number of people in the world who are under 15 years of age is expected to increase by 1.5 billion, and the number of people over 65 years of age is expected to increase by 1 billion.

... ..

2...

Figure 1. The effect of the concentration of the *Agrobacterium* suspension on the transformation efficiency of *Agrobacterium* strains.

19. **Figure 1** shows the \log_{10} of the mean \pm SD of the number of *Y. enterocolitica* per 100 g of muscle for each of the 10 samples. The mean \pm SD of the number of *Y. enterocolitica* per 100 g of muscle for each of the 10 samples was 1.0 ± 0.4 log units. The mean \pm SD of the number of *Y. enterocolitica* per 100 g of muscle for each of the 10 samples was 1.0 ± 0.4 log units.

Journal of Management Studies, 19(1), 67-80.

263, 318

Facility Closure Plan, Deer Creek Plant
July, 1987

TABLE 1

VOLATILE ORGANIC CONSTITUENTS

Chloromethane

Bromomethane

vinyl chloride

acetylene

Trichloroethylene

Perchloroethylene

1,1,1-trichloroethane

1,1,2-trichloroethane

1,1,1,2-tetrachloroethane

1,1,2,2-tetrachloroethane

Methylene chloride
Trichlorofluoromethane
2,1-Dichloroethene
1,1-Dichloroethane
trans-1,2-Dichloroethane
Chloroform
1,2-Dichloroethane
1,1,1-Trichloroethane
Carbon Tetrachloride
Bromodichloromethane
1,2-Dichloropropane
trans-1,3-Dichloropropene

Chlorobenzene
2-Chlorobenzene
Bromobenzene
1,1,2,2-Tetrachloroethane
Tetrachloroethene
Toluene
Chlorobenzene
Ethylbenzene
1,3-Dichlorobenzene
1,2-Dichlorobenzene
1,4-Dichlorobenzene

Facility Closure Plan, Deer Park Plant
July, 1987

TABLE 2

BASE/NEUTRAL EXTRACTABLES

1,3-Dichlorobenzene	Phenanthrene
1,4-Dichlorobenzene	Anthracene
Hexachloroethane	beta-BHC
Bis(2-chloroethyl) ether	Heptachlor
1,2-Dichlorobenzene	delta-BHC
Bis(2-chloroisopropyl) ether	Aldrin
N,N-dimethyl-n-propylamine	Dibutyl sebacate
p-Toluene	Restachlor epoxide
Hexachlorobutadiene	Mecapulfur
1,2,4-Trichlorobenzene	Ethionathione
Isophorone	Endosulfan
Nitrobenzene	4,4'-DDE
Bis(2-chloro-6-methoxy) methane	Pyrene
1,2,3,4,5-Pentachlorocyclopentadiene	Indole

2-Chloronaphthalene
Acenaphthylene
Acenaphthene
Dimethyl phthalate
2,6-Dinitrotoluene
Fluorene
4-Chlorophenyl phenyl ether
2,4-Dinitrotoluene
Diethylphthalate
N-Nitrosodiphenylamine
Hexachlorobenzene
alpha-BHC
4-Bromophenyl phenyl ether
gamma-BHC
Indeno(1,2,3-c,d)pyrene
Dibenzo(a,h)anthracene
N-Nitrosodimethylamine

Endrin
4,4'-DDE
Endrin
4,4'-DDT
Endosulfan sulfate
Endrin aldehyde
Ethyl benzyl phthalate
Ethyl-4-hydroxy-2-naphthyl ether
Chrysene
Benzo(a)anthracene
2,3,7,8-Tetrachlorodibenzo-p-dioxin
Ethyl-4-hydroxy-2-naphthyl ether
2,3,7,8-Tetrachlorodibenzo-p-dioxin
Benzo(a)anthracene
Benzo(b)fluoranthene
Benzo(k)fluoranthene
Benzo(a)pyrene
Benzo(a)anthracene

Facility Closure Plan, Deer Park Plant
July, 1987-

TABLE 3

ACID EXTRACTABLES

2-Chlorophenol
2-Nitrophenol
Phenol
2,4-Dimethylphenol
2,4-Dichlorophenol
2,4,6-Trichlorophenol
4-Chloro-3-methylphenol
2,4-Dinitrophenol
2-Ethyl-4,6-dinitrophenol
2,4,6-Trichlorophenol
4-Nitrophenol

2-methyl-4,6-dinitrophenol

2-methyl-4-nitrophenol

4-nitrophenol

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158

HCH-821-88

DEER PARK, TEXAS 77536-0158

Certified Mail - Return Receipt Requested

Mr. Allen Beinke
Executive Director
Texas Water Commission
P.O. Box 13087, Capitol Station
Austin, Texas 78711-3087

April 6, 1988

Re: The Lubrizol Corporation
Industrial Solid Waste Registration No. 30324
Certification of Partial Facility Closure - Tank B-32

Dear Mr. Beinke:

Enclosed please find the referenced closure certification by an authorized representative of The Lubrizol Corporation and an independent Registered Professional Engineer that the tank B-32 was closed in accordance with the approved closure plan. A certification report providing details of the decontamination methods utilized and the analytical results is also enclosed.

Sincerely,

THE LUBRIZOL CORPORATION



H. Clark Hopper
Environmental Control Mgr.

Enclosure
cc: TWC Southeast Regional Office-Deer Park
J. A. Rexer, Lubrizol

h821-88

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158

CERTIFICATION OF CLOSURE

TANK B-32

The Lubrizol Corporation - Deer Park Plant
Industrial Solid Waste Registration No. 30324

April 6, 1988

Based on field observations made by qualified individuals of this facility working under my direction, I hereby affirm that the closure procedures for Tank B-32 were followed and completed as described in the closure plan approved by the Texas Water Commission.

THE LUBRIZOL CORPORATION

Joe E. Hodge

Joe E. Hodge
General Manager - Houston Plants

ERM-Southwest, inc.

16000 Memorial Drive • Suite 200 • Houston, Texas 77079-4006 • (713) 496-9600

March 31, 1988

Mr. Julius A. Rexer
The Lubrizol Corporation
12801 Bay Area Boulevard
Pasadena, Texas 77507-1397

W. O. #03-27

Re: Closure Certification for Tank B-32

Dear Mr. Rexer:

This letter certifies that the closure of Tank B-32 at the Lubrizol Corporation Deer Park Plant was completed on March 25, 1988 in accordance with the closure steps and schedule outlined in the Closure Plan (Attachment 1) as approved by the Texas Water Commission on February 5, 1988 (Attachment 2). The procedures followed to achieve closure are briefly discussed below.

Tank B-32 is a 15,106 gallon, carbon steel, above-ground tank used to store hazardous wastes generated at the Deer Park manufacturing plant. Equipment ancillary to tank B-32 includes a circulating pump and associated piping, and the concrete retaining area on which the tank is located.

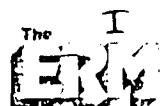
All waste materials were removed from the tank prior to closure. This was confirmed by a visual inspection of the tank. The following steps were taken to clean the tank:

1. A water/detergent solution was circulated through the tank, circulating pump, and associated piping. The concrete retaining area was also washed with a water/detergent solution. The solution was drained to the process sewer and treated in the plant wastewater treatment facility.
2. The tank was steamed for several hours to remove any residual hydrocarbons. The concrete retaining area was also steam-cleaned. The condensate collected from this step was drained to the process sewer.
3. Finally, the system was rinsed by circulating clean water through the tank, circulating pump, and associated piping. This water was once again drained to the process sewer.

Page 1 of 2

New Orleans Office: 3501 North Causeway Boulevard • Suite 200 • Metairie, Louisiana 70002 • (504) 831-6700

An affiliate of the Environmental Resources Management Group with offices in:
Annapolis, MD • Ann Arbor, MI • Bloomington, MN • Boston, MA • Brentwood, TN • Charleston, WV • Charlotte, NC • Columbus, OH • Deerfield, IL • Englewood, CO • Houston, TX • Louisville, KY • Marietta, GA • McLean, VA • Metairie, LA • Miami, FL • Newport Beach, CA • Phoenix, AZ • Portland, ME • Raleigh, NC • Richmond, VA • St. Louis, MO • Tampa, FL • Washington, DC • Wichita, KS



ERM-Southwest, Inc.

Mr. Julius A. Rexer
The Lubrizol Corporation
March 31, 1988
Page 2 of 2

ERM-Southwest performed an inspection of the site for evidence of past releases on March 8, 1988. No evidence of past releases was discovered on the concrete pad.

A sample of the final rinsate from the tank was collected on March 8, 1988 and sent to Lancaster Laboratories in Lancaster, Pennsylvania for volatile organic, base/neutral and acid extractable analyses as required by the closure plan. The Chain-of-Custody documentation shown in Attachment 3 accompanied the sample. The analytical report is shown in Attachment 4. The pH of the final rinsate was determined to be 8.68 S. U. A portable pH meter was used to obtain this data in the field. The meter was calibrated in the field immediately prior to sampling.

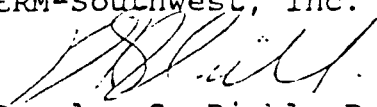
Lubrizol extended an invitation to the TWC Southeast Region office in Deer Park, Texas to witness the rinsate sampling and to split rinsate samples. However, the invitation was declined.

The closure plan, as approved by the TWC, states that "Decontamination shall be considered complete when the results of the rinsate analysis indicate the presence of one milligram per liter (1.0 mg/l) or less of each of the constituents listed in Tables 1, 2, and 3." The Tank B-32 rinsate sample analytical results are shown in Attachment 3. All analytical parameters were reported as less than detection limits. (It should be noted that the detection limits reported are lower than those specified in the approved closure plan.) The tank and ancillary equipment were therefore considered decontaminated per the approved closure plan. As specified in the closure plan, the tank and associated piping should be dismantled and sold at scrap value and the circulating pump should be returned to the plant equipment inventory.

The data included within this report provide verification that the tank and associated equipment have been decontaminated in accordance with the closure plan as approved by the TWC. Therefore, closure of Tank B-32 is complete.

Sincerely,

ERM-Southwest, Inc.


Douglas S. Diehl, P. E.
President

Texas P. E. No. 35789

MP/kcm:c533
Attachments

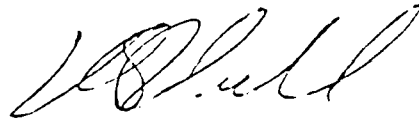
ERM-Southwest, inc.

CERTIFICATION OF
CLOSURE OF TANK B-32

INDUSTRIAL SOLID WASTE REGISTRATION NO. 30324
LUBRIZOL CORPORATION
DEER PARK, TEXAS

Based on field observations made by qualified professionals of this firm working under my direction, I hereby affirm that the closure procedures for Tank B-32 were followed and completed as described in the tank closure plan approved by the Texas Water Commission.

ERM-SOUTHWEST, INC.



Douglas S. Diehl, P.E.
President

Texas P. E. No. 35789

Name: The Lubrizol Corporation

Table II. Designation of Wells by Function - Equalization Basin SWMU

A. Point of Compliance Wells

EQ-1
EQ-2
EQ-3

B. Supplemental Monitor Wells

First Transmissive Zone

EQ-5 (proposed)
EQ-6 (proposed)
EQ-7 (proposed)
EQ-8 (proposed)

Second Transmissive Zone

EQ-4

C. Background Wells

AE-4 (proposed)
AE-2

D. Recovery Wells

14 proposed

Name: The Lubrizol Corporation

TABLE III. Designation of Wells by Function - No. 1 Lift Station SWMU

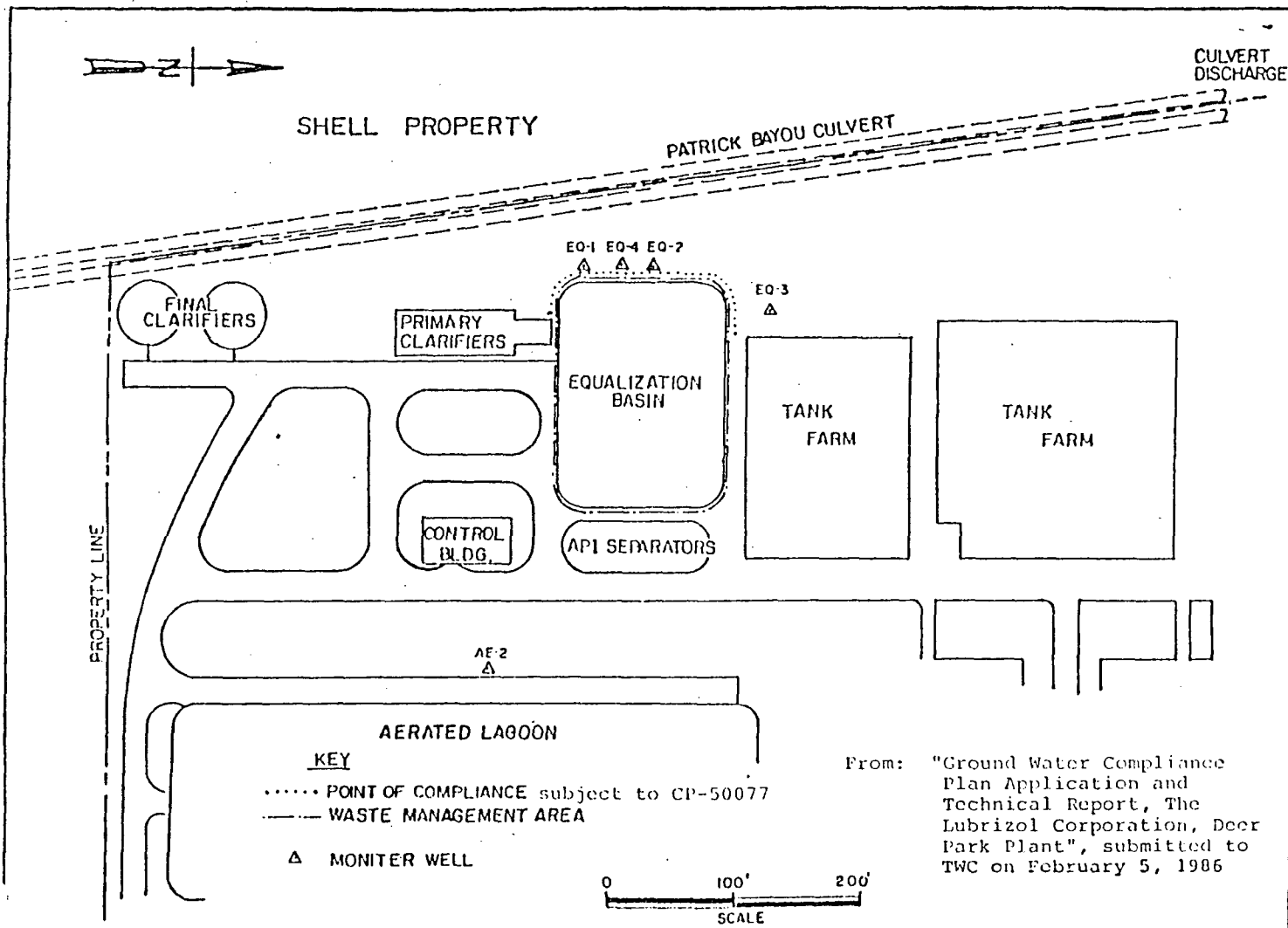
A. Downgradient Monitor Wells

MW-1 ,

LS-2

B. Background Monitor Well

LS-1

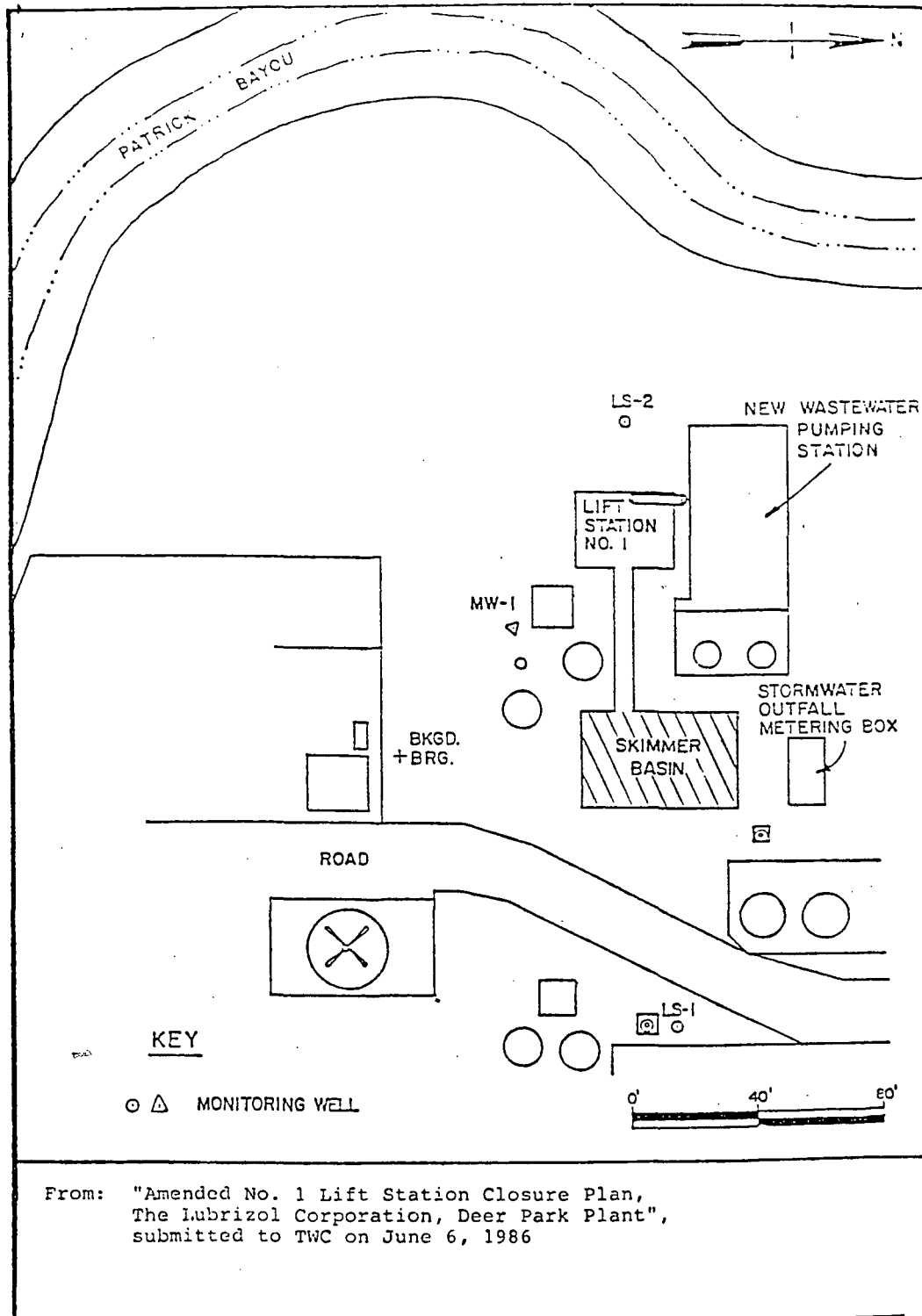


COMPLIANCE PLAN NO. CP-50077

ATTACHMENT A

Name: The Lubrizol Corporation

SHEET 2 of 2



The Lubrizol Corporation - Deer Park Plant
Waste Analysis Plan

Recovered Organic Liquid & Water
TWC Code No. 115490

PCB - Contaminated materials
TWC Code No. 173880

Ion Exchange Resin
TWC Code No. 149990

Class II Non-Hazardous

Biological Sludge, Industrial (sewer sludge)
TWC Code No. 249950

Diatomaceous Earth Filter Media With Oil, Plastic, and Dirt
TWC Code No. 270640

Clarifier Sludge Containing Trace Organics
TWC Code No. 248930

Plant Refuse, General Misc.
TWC Code No. 279760

Scrap Sulfur
TWC Code No. 270240

A. Hazardous Waste

1. Sodium Sulfite Scrubber Solution

Two production units generate an alkaline sodium sulfite solution as a by-product, which is occasionally corrosive (D002).

2. Spent Equipment Wash

Lubrizol Deer Park generates a waste stream which results from equipment wash consisting of spent non-halogenated solvents which fall under the EPA waste number F005, as a listed hazardous waste from non-specific sources.

3. Discarded Lab Solvents

Lubrizol Deer Park generates a waste stream which results from discarded lab solvents, reagents, and samples. This waste exhibits the characteristic of ignitability (D001).

The Lubrizol Corporation - Deer Park Plant
Waste Analysis Plan

4. Recovered Organic Liquid & Water From the Wastewater Treatment and Other Recovery Systems.

Lubrizol Deer Park generates a waste stream from the skimmings of pumping stations in the plant wastewater treatment system, various recovery units within the process sewer system, and organic recovery within our processes. Occasionally these recovered organics will test out to be ignitable (D001).

- 5. Contaminated Soils and Spill Residues

The Lubrizol Deer Park Plant uses non-halogenated solvents in 40 CFR 261.31 (F003 and F005) as well as the following chemical products which are listed in 40 CFR 261.33 (e) and (f) in the development and/or manufacture of different products.

Carbon Disulfide
N-Butyl Alcohol
Isobutyl Alcohol
Maleic Anhydride
Mercury
Methanol
Methyl Ethyl Ketone
Phenol
Phosphorous Sulfide
Toluene
Xylene

Lubrizol expects instances to occur whereby contaminated soils and spill residues will result from a spill into or on land of any of the non-halogenated solvents and/or the above-listed commercial chemical products.

6. Filter Cake Media Containing Barium.

The Lubrizol Deer Park Plant produces barium containing products. These products are filtered using diatomaceous earth. The resulting filter cake, with residual barium containing product is discarded after use as D005 waste.

NEW ☒ UPDATE ☐File III
FY '88 COMPLIANCE MONITORING AND ENFORCEMENT LOGTWC # 30324 EPA ID # TX 0041067638 DISTRICT INSPECTOR I M V
(IF NONE, was EPA Form B700-12 provided? Y ☐ N ☐)

Reviewer:	<u>SAB</u>
Facility:	<u>328</u>
HWDMS:	<u>328</u>
FSS:	<u> </u>

Handler Name Lubrizol Petroleum Chemicals CompanySite Address 41 Tidal Rd Deer Park 77536 (TWC Permit # 50017)
CITY ZIP

Central Office Use:	YY	MM	DD
Sequence: <u> </u>	Action: <u> </u>	Date of initial evaluation: <u> </u> / <u> </u> / <u> </u>	

TYPE OF EVALUATION: 10 ACTUAL DATE OF INSPECTION: 04 / 14 / 88
MM DD YY

- | | | |
|-------------------|---------------------------------------|-----------------------|
| 1 = CEI | 5 = Follow-up (Compliance Sch. Eval.) | |
| 2 = Sampling | 9 = Closure | |
| 3 = Record Review | 10 = Other Inspection | 12 = O & M Inspection |
| 4 = CME | 11 = Case Development | 81 = Special |

Sequence: <u> </u>
Action: <u> </u>

Evaluation Comment: Photos from 4/14/88 inspection of No. 2 Lift Station.

AREA OF VIOLATION

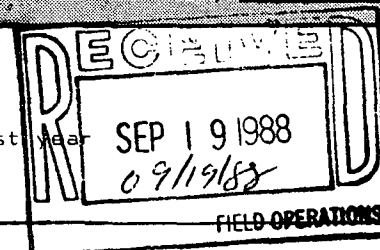
CLASS	A	GW	CL	FI	PT.B	SC	MA	OT	LB
1									
2									
3									

CLASS & VIOLATION

Enter in appropriate box

- 'X' if new violation found
'O' if no violation found
'S' if same violation as last year

Sent to be reviewed:	Y <input type="checkbox"/> N <input type="checkbox"/>
Reviewer:	<u> </u>
Viol. Dis. Date:	<u> </u>
HPV?	Y <input type="checkbox"/> N <input type="checkbox"/>
ENF data entry:	<u> </u>
HWDMS data entry:	<u> </u>

Violation Comment: ENFORCEMENT ACTIONS:
Enter Class, Type & Applicable DatesDATE REFERRED TO CENTRAL OFFICE / / New ☐ Update ☒

EC 001

						COMPLIANCE		PENALTIES		
CLASS.	AREA	SEQ	A	TYPE	DATE	SCH. DATE	ACTUAL DATE	ASSESSED	COLLECTED	RA
	GW									
	CP									
	FR									
	PT.B									
	SC									
	MA									
	OT									
	LB									

TYPE OF ENFORCEMENT CODES:

- 03 = NOV SENT
04 = TWC DRAFT ORDER
05 = TWC FINAL ORDER
10 = INFORMAL ACTION
11 = AG PETITION
14 = REFERRAL TO EPA
15 = CA DRAFT ORDER
16 = CA FINAL ORDER
18 = REFERRAL TO AG
19 = AG JUDGEMENT

X- EPA
X- ENF

WORK #: 4005Enforcement Comment:

TEXAS WATER COMMISSION

C.O. Use Only

SOLID WASTE INSPECTION REPORT
For RCRA Permitted Facilities

TWC Reg.: 30324

HW Permit: 50077

0488 50077

INSPECTION COVERSHEET

Issued: 2/16/88

TWC District 7

EPA ID No. TXDC41067638

Commercial Waste Facility

Govt. Facility

NAME OF PERMITTEE Lubrizol Corp. - Deer Park Plant

MAILING ADDRESS P.O. Box 158, Deer Park TX 77536

Tel.

SITE LOCATION 41 Tidal Rd. Deer Park

Tel. (713) 479-2851

COUNTY Harris

TYPE OF BUSINESS Manufacture performance additives for tube oils and fuels

OPERATIONAL STATUS: Active

CURRENT WASTE MANAGEMENT (Haz. - "H"; Class I Nonhaz. - "NH"; Class II - "II"; Class III - "III")

Generate H NH II Treat NH II Store H NH II Dispose Transport

HW Permitted Facilities:(circle) C (T) SI WP LT LF I TT TR O

HW Interim-Status Facilities: C T SI WP LT LF I TT TR O

HW Permit-Exempt Facilities: SA (C) (T)

Non-Hazardous Waste Facilities: (C) (T) (SI) WP LT LF I TT TR O

ENFORCEMENT STATUS: Draft NOV submitted with 8/1/88 IOM

TYPE OF INSPECTION:(circle) CEI GW CL CD SA FO (OT)

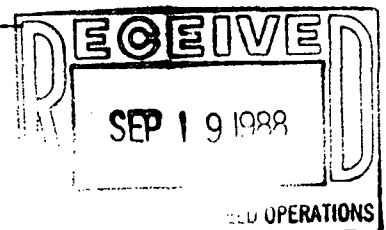
Inspector's Name and Title Mac Vilas - Field Investigator

Inspection Participants Wayne Harry - Permit Writer
Julius Rexer, Clark Happer

Date(s) of Inspection April 14, 1988

Signed: Mac Vilas 9/1/88
Inspector (SP) Date

Approved: W. J. K. Jones 9/14/88
District Manager



TWC SW INSPECTION REPORT
For RCRA Permitted Facilities
CONTENTS SHEET

HW Permit 50077

- ☒ 1. Data Entry Form 0814
- ☒ 2. Inspection Coversheet
- ☐ 3. Permit Compliance Checklist
- ☐ 4. Facility Standards Checklist
- ☐ 5. Generators Checklist

6. Permitted Units Checklists:

- ☐ Containers (C)
- ☐ Tanks (T)
- ☐ Surface Impoundments (SI)
- ☐ Waste Piles (WP)
- ☐ Land Treatment (LT)
- ☐ Landfills (LF)
- ☐ Incinerators (I)
- ☐ Other (O)

7. Non-Permitted Units Checklists:

- ☐ Satellite Accumulation Area (SA)
- ☐ Containers (C)
- ☐ Tanks (T)
- ☐ Surface Impoundments (SI)
- ☐ Waste Piles (WP)
- ☐ Land Treatment (LT)
- ☐ Landfills (LF)
- ☐ Incinerators (I)
- ☐ Thermal Treatment (TT)
- ☐ Chem, Phy, Biol. Treatment (TR)
- ☐ Other (O)

- ☐ 8. Compliance Plan Review Sheet
- ☐ 9. Closure/Post Closure Checklist
- ☐ 10. Closure-In-Progress Checklist
- 11. Land Disposal Restrictions:
 - ☐ a. Generators Checklist
 - ☐ b. T/S/D Facilities Checklist
- ☐ 12. TWC Registration
- ☐ 13. Maps, Plans, Sketches
- ☒ 14. Photographs
- ☐ 15. Sample Analysis Results
- ☐ 16. Notice of Violation (NOV) Letter
- ☒ 17. Interoffice Memorandum (IOM)
- ☐ 18. Enforcement Referral Report
- ☐ 19. Other (describe): _____

NOTE: If a required checklist is omitted, explain: _____

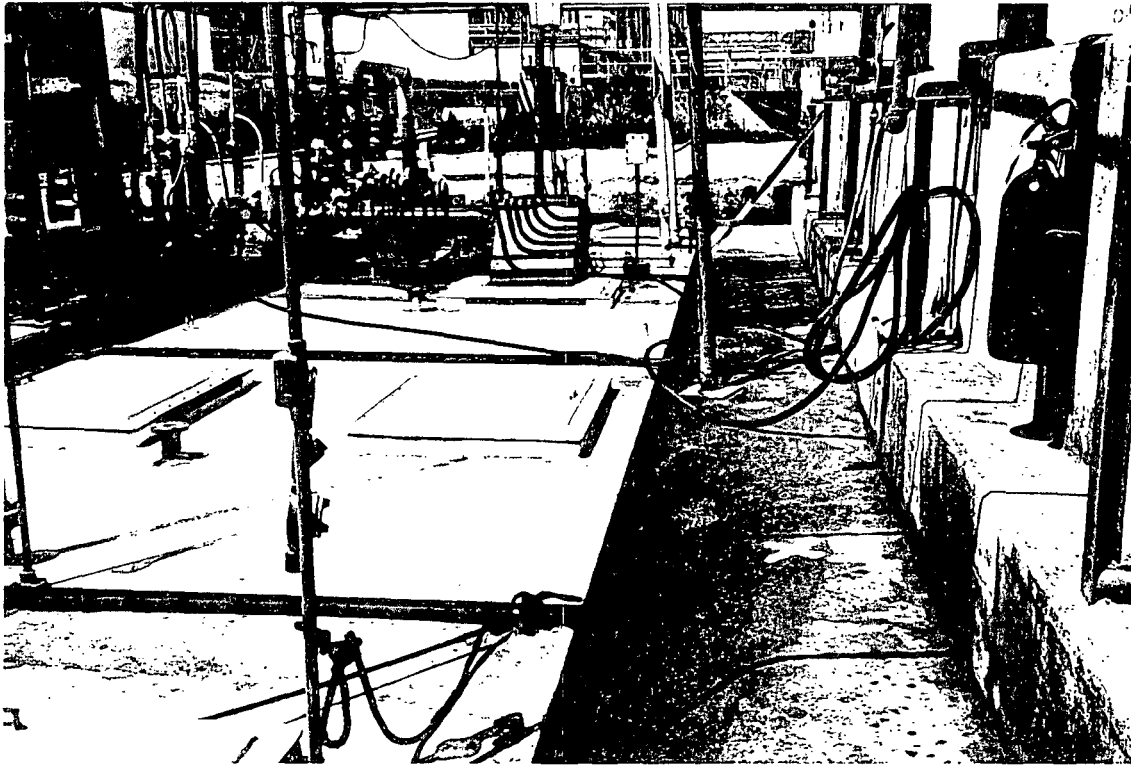


Photo No. 1 - Lubrizol - Reg. No. 30324 - 4/14/88
 No. 2 Lift Station, proposed boring location SB-2A, looking west. Patrick Bayou culvert in the background.

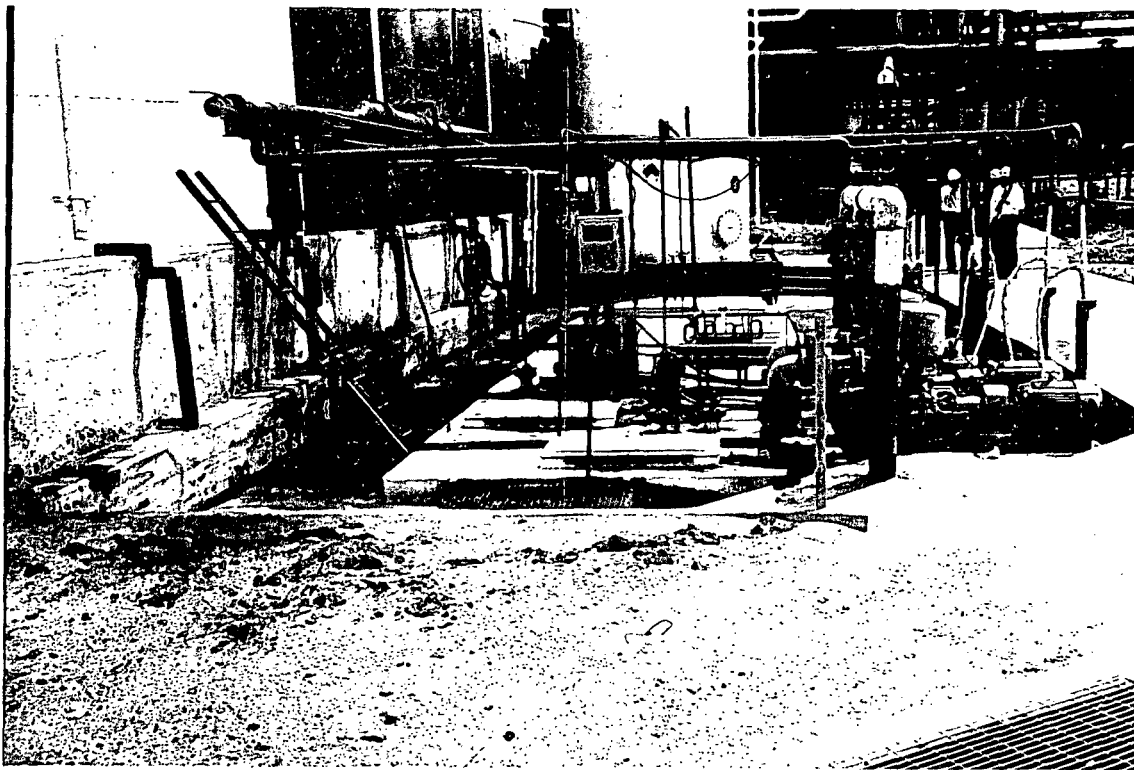


Photo No. 2 - Lubrizol - Reg. No. 30324 - 4/14/88
 No. 2 Lift Station looking east.

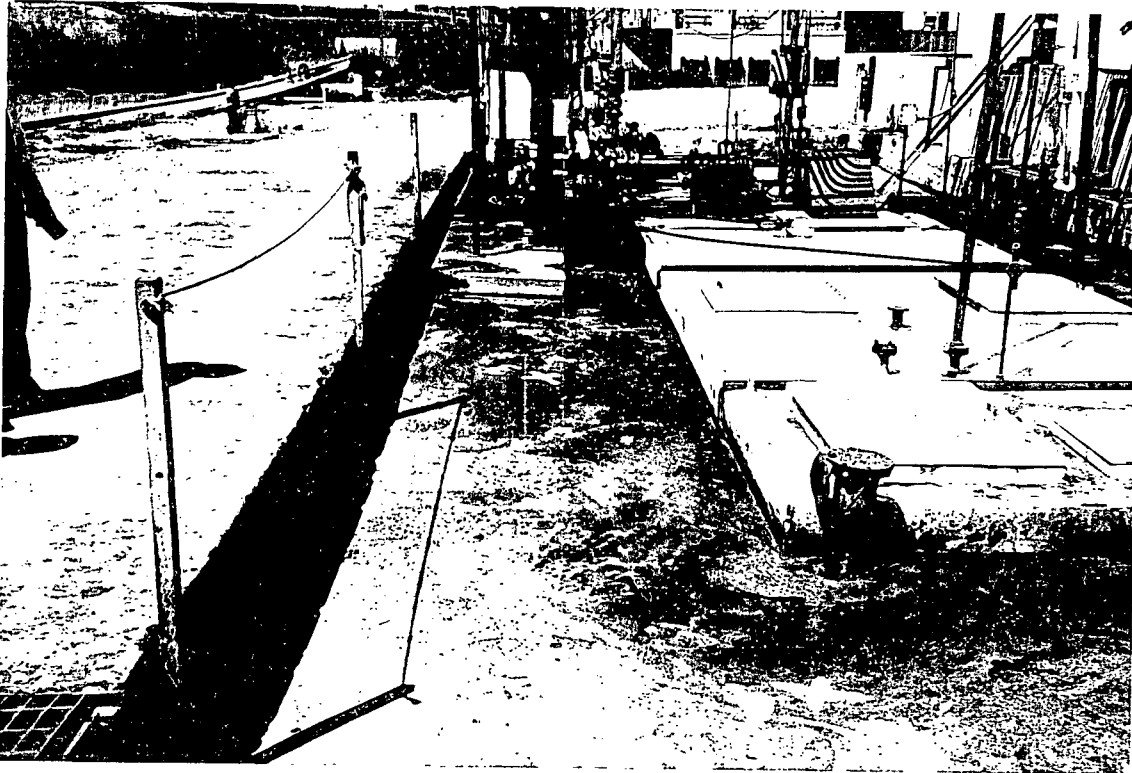


Photo No. 3 - Lubrizol - Reg. No. 30324 - 4/14/88
No. 2 Lift Station proposed boring locations SB-3 and SB-4, looking west. Patrick Bayou culvert in the background.

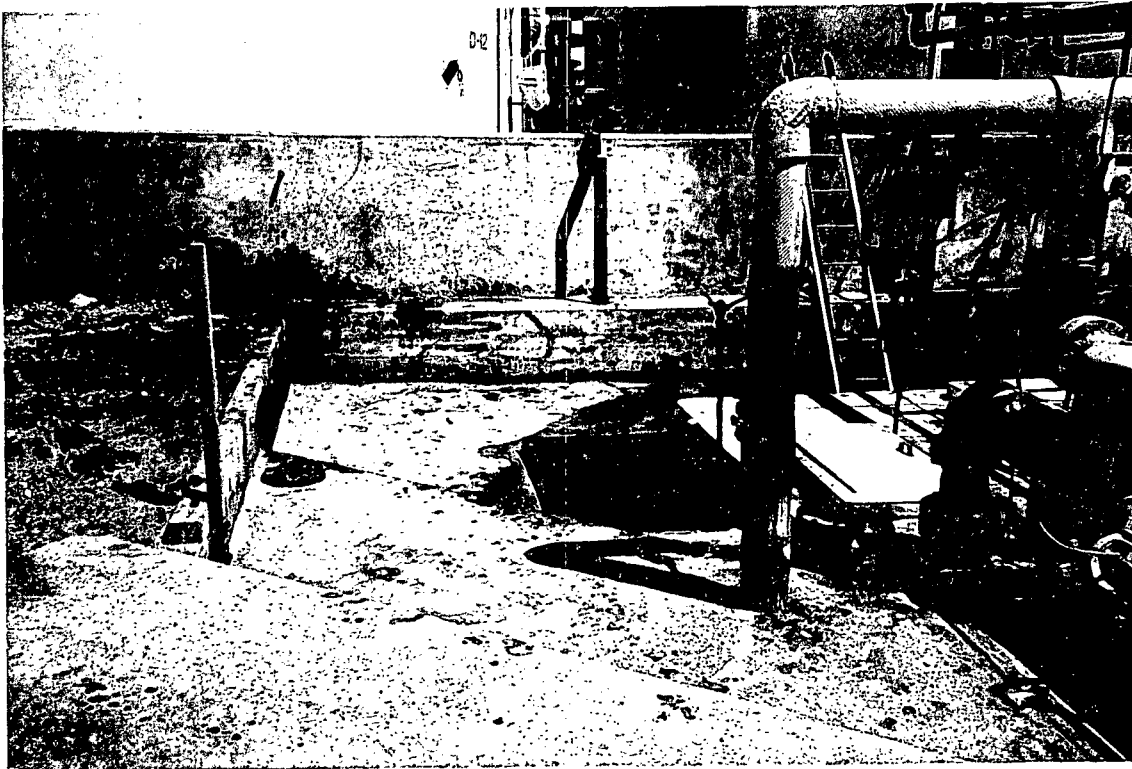


Photo No. 4 - Lubrizol - Reg. No. 30324 - 4/14/88
No. 2 Lift Station proposed boring locations SB-1 and SB-2 (alternate), looking north.

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : Bobby Whitefield, Chief, Technical and Information Services, Hazardous & Solid Waste Division
THRU : Ernest Heyer, Head, Program Services Unit
Field Operations Division
FROM : Mac Vilas, Field Investigator
Southeast Region, Deer Park Office
SUBJECT: Lubrizol Corp., Reg. No. 30324, Permit No. HW-50077-000

DATE: 9/9/88

Attached are photographs from the April 14, 1988 inspection of the No. 2 Lift Station at Lubrizol by Wayne Harry and Mac Vilas of the TWC. These photographs should be affixed to the Conference Memo dated April 14, 1988. Please see Lubrizol correspondence dated May 2, 1988 for additional information and site plan showing location of soil borings at the No. 2 Lift Station.

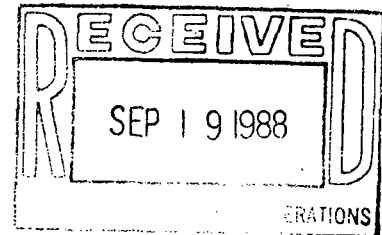
This information is submitted for file data.

Signed: Mac Vilas
Mac Vilas
Field Investigator

Approved: W. J. Van Evers
W. J. Van Evers, Manager
Hazardous & Solid Waste

WJV/MV/nm

Attach:



File
11.1.

EPA Land Ban Violation

TEXAS WATER COMMISSION

TWC Reg.: 30324

C.O. Use Only

SOLID WASTE INSPECTION REPORT
For RCRA Permitted Facilities

HW Permit: 50077-000

0888 ~~688~~ JUN 27 1988

Issued: 2/16/88

INSPECTION COVERSHEET

TWC District 7

EPA ID No. TXDC41067638 Commercial Waste Facility Govt. Facility

NAME OF PERMITTEE Lubrizol Corporation - Deer Park Plant

MAILING ADDRESS P.O. Box 158, Deer Park TX 77536 Tel.

SITE LOCATION 41 Tidal Road Deer Park TX 77536 Tel. (713) 479-2851

COUNTY Harris TYPE OF INDUSTRY Manufactures performance additives
for lube oils, greases and fuels

OPERATIONAL STATUS: Active

CURRENT WASTE MANAGEMENT (Haz.-"H"; Class I Nonhaz.-"NH"; Class II-"II"; Class III-"III")

Generate H, NH, II Treat NH, H Store H, NH, II Dispose

Transport (Wastewater treatment)
NPDES

HW Permitted Facilities:(circle) C (T) SI WP LT LF I TT TR O

HW Interim-Status Facilities: C T SI WP LT LF I TT TR O

HW Permit-Exempt Facilities: (C) (T)

Non-Hazardous Waste Facilities: (C) (T) (SI) WP LT LF I TT TR O

TYPE OF INSPECTION:(circle) CEI GW CL CD SA FO OT

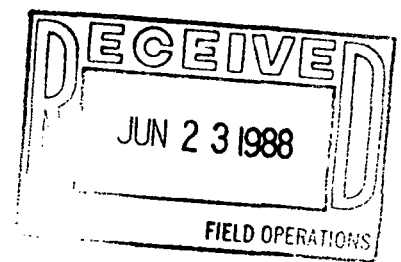
Inspector's Name and Title Mac Vilas - Field Investigator

Inspection Participants Julius Rexer, Clark Hopper

Date(s) of Inspection April 29, 1988

Signed: Mac Vilas 5/27/88
Inspector Date

Approved: W. Kanewer 6/17/88
District Manager



TWC Solid Waste Inspection Report

**F-Solvent LAND DISPOSAL RESTRICTION
GENERATOR CHECKLIST****A. F-SOLVENT IDENTIFICATION**

1. Does the handler generate the following hazardous wastes?

- a. F001
b. F002
c. F003

YES ☐ NO ☒
YES ☐ NO ☒
YES ☐ NO ☒

If an F003 wastestream listed solely for ignitability has been mixed with a nonrestricted solid or hazardous waste, does the resultant mixture exhibit the ignitability characteristic?

YES ☐ NO ☒

- d. F004
e. F005

YES ☐ NO ☒
YES ☒ NO ☐

2. Source of the above information: EPA Form 8700 ☐; Part A ☐; Part B ☒;
Other(specify): Notice of Registration

NOTE: Appendix A is useful in determining whether the facility is generating F-solvent wastes, if such wastes were not identified by the facility previously. If you are concerned that F-solvent wastes may be misclassified or mislabeled, turn to Appendix A. Note concerns below:

None

B. BDAT* TREATABILITY GROUP - TREATMENT STANDARDS IDENTIFICATION

1. Did generator correctly determine the appropriate treatability group (40CFR Part 268.41) of the waste?

YES ☒ NO ☐

C. WASTE ANALYSIS

1. Did the generator determine whether the waste exceeds treatment standards based on 40CFR Part 268.7(a)?

YES ☒ NO ☐

Check the method used for determination:

- ☒ a. Knowledge of wastes
☐ b. TCLP** Analysis
☐ c. Other (specify) _____

If determined by TCLP, provide: date of last test, frequency of testing, and attach test results.

Dates/frequency: _____

* Best Demonstrated Available Treatment

** Toxicity Characteristic Leaching Procedure

2. Did the F-solvent wastes exceed applicable treatability group standards upon generation? [Section 268.7(a)(2)]

YES ☒ NO ☐

3. Did the generator dilute the waste or the treatment residual so as to substitute for adequate treatment? [Section 268.3]

YES ☐ NO ☒

- FOOS Waste is mixed with a Dool Waste, in tank 1106

D. MANAGEMENT

1. Onsite Management:

a. Are F-solvent wastes treated, stored or disposed of onsite? YES ☒ NO ☐

If yes, complete Land Restriction T/S/D Checklist; If no, answer #2.

b. Are test results maintained in the operating record? YES ☐ NO ☒

FOOS, by process knowledge

2. Offsite Management:

a. If F-solvent wastes exceed treatment standards, did generator provide the treatment facility with: [268.7(a)(1)]

(1) EPA number?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
(2) Applicable treatment standard?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
(3) Manifest number?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
(4) Waste analysis data, if available?	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

Identify off-site treatment facilities: Hansbrough Energy Systems

Crowly, Louisiana

b. If F-solvent wastes do not exceed treatment standards, did generator provide the disposal facility with: [268.7(a)(2)]

(1) EPA Hazardous Waste number?	N/A	YES <input type="checkbox"/>	NO <input type="checkbox"/>
(2) Applicable treatment standard?		YES <input type="checkbox"/>	NO <input type="checkbox"/>
(3) Manifest number?		YES <input type="checkbox"/>	NO <input type="checkbox"/>
(4) Waste analysis data, if available?		YES <input type="checkbox"/>	NO <input type="checkbox"/>
(5) Certification regarding waste and that it meets treatment standards?		YES <input type="checkbox"/>	NO <input type="checkbox"/>

Identify Land Disposal facilities receiving BDAT certified wastes:

- c. If waste is subject to **nationwide variance** (e.g., solvent-water mixtures less than 1%), case-by-case **extension** (268.5) or a **petition** (268.6) does generator provide notice to disposer that waste is exempt from land disposal restrictions [268.7(a)(3)]?

N/A YES ☐ NO ☒

E. STORAGE OF F-SOLVENT WASTE

1. Was F-solvent waste stored for greater than 90 days (after variance 180/270 days for SQG)?

YES ☒ NO ☐

If yes, was facility operating as a TSD under RCRA interim-status or final permit?

YES ☒ NO ☐

F. TREATMENT USING RCRA 264/265 EXEMPT UNITS OR PROCESSES

(i.e., boilers, furnaces, distillation units, w.w. treatment tanks, etc.)

1. Were treatment residuals generated from RCRA 264/265 exempt units or processes?

N/A YES ☐ NO ☒

If yes, list type of treatment unit and processes: _____

NOTE: If the residuals from a RCRA-exempt treatment unit are above the treatment standards, the owner/operator is considered a generator of restricted waste. The inspector should determine whether the generator requirements, particularly waste identification requirements, have been met for the treatment residuals.

APPENDIX A

F-SOLVENT IDENTIFICATION CHECKLIST

1. Does the handler generate any of the following F001 constituents (i.e., spent halogenated solvents used in degreasing) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
trichloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methylene chloride	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,1-trichloroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
carbon tetrachloride	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
chlorinated fluorocarbons	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

2. Does the handler generate any of the following F002 constituents (i.e., spent halogenated solvents) as a result of being used in the process either in pure form or commercial grade?

tetrachloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
trichloroethylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methylene chloride	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,1-trichloroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
chlorobenzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
trichlorofluoromethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,2-trichloro-1,2,2-trifluoroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ortho-dichlorobenzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
1,1,2-trichloroethane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

3. Does the handler generate any of the following F003 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

xylene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
acetone	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ethyl acetate	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ethyl benzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
ethyl ether	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methyl isobutyl ketone	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
n-butyl alcohol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
cyclohexane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
methanol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

If the F003 wastestream has been mixed with solid waste, does the resultant mixture exhibit the ignitability characteristic?

YES ☐ NO ☒

4. Does the handler generate any of the following F004 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

cresols and cresylic acid	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
nitrobenzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

5. Does the handler generate any of the following F005 constituents (i.e., spent nonhalogenated solvents) as a result of being used in the process either in pure form or commercial grade?

toluene	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
methyl ethyl ketone	YES <input checked="" type="checkbox"/>	NO <input type="checkbox"/>
carbon disulfide	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
isobutanol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
pyridine	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
benzene	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
2-ethoxyethanol	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>
2-nitropropane	YES <input type="checkbox"/>	NO <input checked="" type="checkbox"/>

6. Are any of the constituents listed in the questions 1-5 used for their "solvent" properties -- that is to solubilize (dissolve) or mobilize other constituents? The following questions will be helpful in confirming this determination.

a. Chemical Carriers? YES ☐ NO ☒
If yes, list the constituents.

b. Degreasing/Cleaning? YES ☒ NO ☐
If yes, list the constituents.

Toluene, MEK

c. Diluents? YES ☐ NO ☒
If yes, list the constituents.

d. Extractants? YES ☐ NO ☒
If yes, list the constituents.

e. Fabric Scouring? YES ☐ NO ☒
If yes, list the constituents.

f. Reaction and Synthesis Media? YES ☐ NO ☒
If yes, list the constituents.

NOTE: If answers to questions 1-6 indicate that the waste may be an F-solvent, answer question 7.

7. Are any of the above constituents solvents? A solvent is considered "spent" when it has been used and is no longer used without being regenerated, reclaimed, or otherwise reprocessed. YES ☒ NO ☐
8. If the waste is a mixture of constituents as determined in questions 1-6, answer this to determine whether it is a "solvent mixture" covered by the listings.

If the wastestream is mixed and contains more than one of the F001-F005 constituents listed in questions 1-5 (by volume), give the concentration before use of all the constituents in the solvent mixture/blend.

For example:

5%	methylene chloride
2%	trichloroethylene
25%	1,1,1-trichloroethane
68%	mineral spirits
<u>100%</u>	

If the wastestream is a mixture containing a total of 10% or more (by volume) of one or more of the F001, F002, F004, or F005 listed constituents before use, it is a listed waste.

With respect to the F003 solvent wastes, if, before use, the wastestream is mixed and contains only F003 constituents, it is a listed waste.

For example:

33%	acetone
16%	methanol
51%	ethyl ether
<u>100%</u>	

If the wastestream is a mixture containing F003 constituents and a total of 10% or more of one or more of the F001, F002, F004, and F005 listed constituents before use, it is a listed waste. For example:

50%	xylene	F003
12%	TCE	F001
38%	mineral spirits	
<u>100%</u>		

If in light of the above, the handler appears to be generating F001-F005 hazardous wastes, refer this facility to the enforcement official for follow-up actions verifying the use of solvents at the facility.

(spent equipment wash)
Lubrizol generates an F005 waste according to the Waste Analysis Plan in the Part B and on the Registration (waste No. 010).
Please see attachments.

**F-Solvent LAND DISPOSAL RESTRICTION
TREATMENT/STORAGE/DISPOSAL FACILITIES CHECKLIST**

NOTE: The federal F-solvent land disposal restriction rules became effective on November 8, 1986. A two year variance to the effective date was granted all dioxin wastes and some solvent wastes.

A. GENERAL FACILITY STANDARDS

1. Was **waste analysis plan** revised to cover Part 268 requirements? YES ☒ NO ☐
(264.13 or 265.13)
2. Did the facility obtain representative chemical and physical analysis of wastes and residues? YES ☐ NO ☒
 - a. Did testing include analyses for all F001-F005 constituents? YES ☐ NO ☒
 - b. Were analysis performed using TCLP*? YES ☐ NO ☒
 - c. Were analyses performed Onsite or Offsite? ☒ ON ☐ OFF ☐
(identify offsite lab): _____
- d. Does the frequency of sampling appear adequate? YES ☐ NO ☐
- e. Do procedures used to identify manifest discrepancies appear adequate?
F waste is generated and stored on-site.
F waste is not received from off-site. YES ☒ NO ☐

B. STORAGE (268.50)

1. a. Does facility store restricted wastes exceeding treatment standards? YES ☒ NO ☐
If no, go to Section C.
- b. Are all containers clearly marked to identify content and date(s) entering storage? YES ☒ NO ☐
- c. Do operating records track the location, quantity, and dates that wastes exceeding treatment standards entered and were removed from storage? YES ☒ NO ☐
- d. Do operating records agree with container labeling? YES ☒ NO ☐
- e. Is waste exceeding treatment standards stored for less than one year? YES ☒ NO ☐
 - (1). If yes, can you show that such accumulation is not necessary to facilitate proper recovery, treatment, or disposal? YES ☐ NO ☒
 - (2). If yes, state how: _____

f. Were tanks emptied at least once per year, and do operating records show that volume of waste removed from tanks annually at least equals tank volume?

YES ☒ NO ☐

g. Was/is waste exceeding treatment standards stored for more than one year?

YES ☐ NO ☒

If yes, state the owner/operator's proof that such storage was solely for the purposes of accumulation of such quantities of hazardous waste as are necessary to facilitate proper recovery, treatment, or disposal:

h. Are F-solvent wastes exceeding treatment standards "stored" (not treated) in surface impoundments?

YES ☐ NO ☒

C. TREATMENT IN SURFACE IMPOUNDMENTS (268.4)

1. Were F001-F005 wastes exceeding treatment standards placed in surface impoundments for treatment?

YES ☐ NO ☒

If no, go to Section D.

2. Did the facility submit a certification of compliance with minimum technology and groundwater monitoring requirements, and the waste analysis plan to the EPA?

N/A
YES ☐ NO ☐

3. Have the minimum technology requirements been met?

YES ☐ NO ☐

a. If the minimum technology requirements have not been met, has a **waiver** been granted for that unit(s)?

YES ☐ NO ☐

4. Have the RCRA groundwater monitoring requirements been met? (CFR 265 Subpart F)

YES ☐ NO ☐

5. Have representative samples of sludge and supernatant from the surface impoundment been tested separately, acceptably, and in accordance with the sampling frequency and analysis specified in the waste analysis plan and are the results in the operating record?

YES ☐ NO ☐

6. Did the hazardous waste residue (sludge or liquid) exceed the treatment standards specified in 268.41?

YES ☐ NO ☐

7. Provide the frequency of analyses conducted on treatment residues:

8. Does the operating record adequately document the results of waste analyses performed in accordance with 268.41?

YES ☐ NO ☐

9. Have the hazardous waste residues that exceed the treatment standards (268.41) been removed adequately and annually? N/A ☒ YES ☐ NO
- a. If answer to question #6 is no, and the supernatant is determined to exceed treatment concentrations, is annual throughput greater than the impoundment volume? YES ☐ NO ☐
10. If residues were removed annually, were adequate precautions taken to protect liners and do records indicate that inspections of liner integrity are performed? YES ☐ NO ☐
11. When removed, were solvent wastes managed subsequently in another surface impoundment? NO ☐ YES ☐
12. When removed, were wastes treated prior to disposal? YES ☐ NO ☐
- a. If yes, are waste residues treated onsite or offsite? N/A ☒ ON ☐ OFF ☐
- b. Identify management method: _____

D. TREATMENT

1. Did the facility operate treatment facilities for F-solvent waste (not including surface impoundments)? YES ☐ NO ☒
- If no, go to Section E.
2. Describe the treatment process for F-solvent wastes: _____
3. Does the facility, in accordance with an acceptable waste analysis plan, verify that the residue extract from all treatment processes for the F-solvent wastes are less than treatment standards? [268.7(b)(2)] N/A YES ☐ NO ☐
4. Describe frequency of testing of treatment residuals: _____
5. Was dilution used as a substitute for treatment? NO ☐ YES ☐
6. Are certifications and results of waste analyses kept in the operating record? YES ☐ NO ☐
7. Is notice (with waste no., treatment standard, manifest no., and analytical data, where available) submitted for each shipment of waste or treatment residual? [268.7(b)] YES ☐ NO ☐

8. Are certifications that wastes meet treatment standards submitted for each shipment? [268.7(b)(2)(i)]

N/A YES ___ NO ___

E. LAND DISPOSAL

1. Were F-solvent wastes placed in Land Disposal Units? [i.e., landfills, surface impoundments (do not include if in Section C), wastepiles, wells, land treatment units, salt domes/beds, mines/caves, concrete vaults, or bunkers]

YES ___ NO ☒

2. Did facility have the notice and certification from generators/treaters in its operating record? [268.7(c); 268.7(a), (b)]

N/A YES ___ NO ___

3. Did the facility obtain waste analysis data through testing of the waste to determine that the wastes are in compliance with the applicable treatment standards? [268.7(c)]

YES ___ NO ___

4. Were F-solvent wastes exceeding the treatment standards placed in land disposal units [268.30], excluding national capacity variances [268.30(a)]?

YES ___ NO ___

- a. If yes, did facility have an approved waiver based on: a no-migration petition [268.6] or an approved case-by-case capacity extension [268.5] or a variance [268.44]?

YES ___ NO ___

5. Were F-solvent wastes disposed of which were subject to a national or case-by-case capacity variance/extension?

YES ___ NO ___

- a. If yes, were these wastes disposed of in a facility that has a new, replacement, or laterally expanded landfill or impoundment?

YES ___ NO ___

- b. If (a.) is yes, have the minimum technology requirements been met for all such units at the facility?

YES ___ NO ___

6. Were adequate records of disposal maintained?

YES ___ NO ___

7. If wastes subject to a nationwide variance, case-by-case extensions [268.5], or no-migration petitions [268.6] were disposed, does facility have notices [268.7(a)(3)] and records of disposal?

YES ___ NO ___

8. What is the volume of F-solvent waste disposed to date by waste?

9. If the facility has a case-by-case extension, can the inspector verify that the facility is making progress as described in progress reports?

YES ___ NO ___

↓

III.1

TEXAS WATER COMMISSION

B. J. Wynne, III, Chairman
Paul Hopkins, Commissioner
John O. Houchins, Commissioner



Allen Beinke, Executive Director

J. D. Head, General Counsel
Michael E. Field, Chief Examiner
Karen A. Phillips, Chief Clerk

September 2, 1988

Allyn M. Davis, Ph.D., Director
Hazardous Waste Management Division
U. S. Environmental Protection Agency
Region VI
1445 Ross Avenue
Dallas, Texas 75202



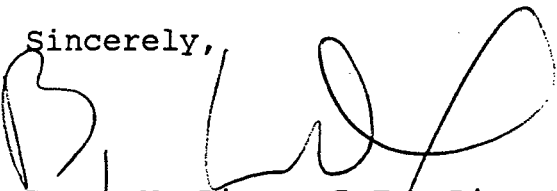
Re: The Lubrizol Corporation, ISW Reg. No. 30324 -
TXD041067638
U. S. Army Air Defense Command - Fort Bliss,
ISW Reg. No. 63003 - TX4313720101

Dear Dr. Davis:

This letter is written to inform you that the inspection reports for the above referenced entities were received by the TWC Screening Committee in excess of 45 days from the date of inspection. As a result of this, the violation discovery date will be August 24, 1988 (the date the report was reviewed by the Screening Committee) and petitions for the two facilities will be issued within 90 days of that date.

If you have any questions regarding this matter, please contact Anne Dobbs at 512-463-8461.

Sincerely,


Bryan W. Dixon, P.E., Director
Hazardous and Solid Waste Division

cc: Shirley Workman, EPA, Project Officer, State Programs
Section (6H-HS)
Ken Zarker, Reports and Information Management Unit
Sherry Pierce, Haz. & SW Enforcement Unit
Allan Posnick, Haz. & SW Enforcement Unit
TWC Southeast Region, Deer Park Office
TWC District 10

TEXAS WATER COMMISSION



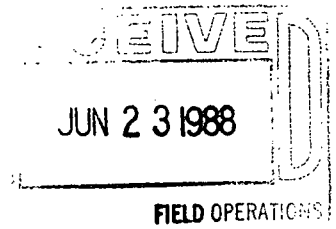
Paul Hopkins, Chairman
John O. Houchins, Commissioner
B. J. Wynne, III, Commissioner

J. D. Head, General Counsel
Michael E. Field, Chief Examiner
Karen A. Phillips, Chief Clerk

Allen Beinke, Executive Director

June 14, 1988

Mr. Julius Rexer
The Lubrizol Corporation
Deer Park Plant
P.O. Box 158
Deer Park, Texas 77536-0158



Re: The Lubrizol Corporation - Reg. No. 30324

On April 29, 1988, Mr. Mac Vilas of this office conducted an inspection of your facility to determine compliance with the Commission's rules pertaining to solid waste management. The following deficiency was noted:

1. 31 Texas Administrative Code Section 335.6(c) - Notification Requirements

The Notice of Registration needs to be updated to reflect current waste management practices. Specifically, the following items need to be addressed:

- a. The generating site location address listed on the registration is incorrect.
- b. Waste No. 021 (crankcase oil) is listed as a hazardous waste stored in Solid Waste Management Facility No. 07 (Permitted Unit No. 3, Tank No. 6). The permit does not authorize storage of a hazardous crankcase oil. Please resubmit analysis and documentation to properly classify this waste.
- c. Solid Waste Management Facility No. 05 (Tank W0-3) was noted as inactive.
- d. Solid Waste Management Facility No. 7 (Tank W0-6) is listed as an inactive facility. The capacity of W0-6 is listed as 25,320 gallons on the registration, while it is only permitted for 22,800 gallons.
- e. Solid Waste Management Facility No. 08 (Tank T-19P) was noted as inactive.
- f. Solid Waste Management Facility No. 13 (Tank T-23X) was noted as active.
- g. Solid Waste Management Facility No. 14 (Tank CA-1) has a permitted capacity of 17,600 gallons, while the registration lists the capacity as 15,231 gallons.

Mr. Julius Rexer

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June 8, 1988

- h. Solid Waste Management Facility No. 15 (Tank J-42) has a permitted capacity of 9,000 gallons while the registration lists the capacity as 10,000 gallons.
- i. Solid Waste Management Facility No. 18 (Tank B-32) is listed as inactive on the registration. This tank should be listed as closed since closure certification has been submitted.
- j. Solid Waste Management Facility No. 25 (Tank RA-3) is listed as a tank for storage of hazardous waste. It was noted a less than 90-day storage facility.
- k. Solid Waste Management Facility No. 28 (Tank W0-2) is listed as a tank for storage of hazardous waste on the registration. It was noted as a less than 90-day storage facility.
- l. Solid Waste Management Facility No. 40 is listed as a hazardous waste storage facility on the registration. It was noted as a less than 90-day storage facility.

Please respond to this office in writing by July 13, 1988 with your plans and implementation schedule which will ensure corrective action of the above listed deficiency. If you have any questions, please contact Mac Vilas at (713) 479-5981.

Sincerely,



W.J. Van Evers, Manager
Hazardous and Solid Waste
Southeast Region

WJV/MV/nm

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : Bobby Whitefield, Chief, Reports and
Management Section, Hazardous & Solid Waste Division
THRU *lec*: Luis Campos, Hazardous & Solid Waste Coordinator
Field Operations Division
FROM : Mac Vilas, Field Investigator
Southeast Region, Deer Park Office
SUBJECT: Lubrizol Corp., Reg. No. 30324, Permit No. HW50077-000

DATE: 6/14/88

ACTIVE

JUN 23 1988

I. INTRODUCTION

On April 29, 1988, a compliance evaluation inspection was conducted at the Lubrizol Corporation in Deer Park. Lubrizol manufactures performance additives for lubricating oils, lubricating greases and fuels. Lubrizol was issued a permit on February 16, 1988 for hazardous waste storage in three tanks, CA-1, J-42 and WO-6, with a total permitted capacity of 49,400 gallons.

II. FINDINGS

1. Lubrizol's closure plan, which was approved and incorporated into the permit, is not accurate, as discussed below:
 - a) The closure plan indicates that there are four hazardous waste storage tanks to be closed. There are actually three hazardous waste storage tanks, since one of the tanks, B-32, was closed in April 1988.
 - b) The closure plan does not incorporate an estimate of the maximum inventory of waste in storage at any time in the life of the facility as required by 40 CFR Part 264.112. Lubrizol estimates 75% of total capacity of waste at the time of closure. The maximum operating capacity of the three permitted tanks is 49,400 gallons. The closure plan lists the maximum expected inventory at time of closure as 38,630 gallons.
 - c) The permit requires financial assurance for closure costs of \$94,000. Lubrizol has adequate financial assurance for closure in the amount of \$121,540.
 - d) It should also be noted that a contingent post-closure care plan for tanks not meeting secondary containment requirements of 40 CFR 264.193 is not in the closure plan. TWC permitted Unit No. 3 (Tank WO-6) does not have adequate secondary containment; it has concrete dikes on two sides and is open on the other two sides. Provision III D(1)(d) of the permit requires that each storage area have sufficient capacity to contain the volume of the largest tank, or 10% of the total tank capacity, whichever is greater, by January 12, 1989.

Bobby Whitefield

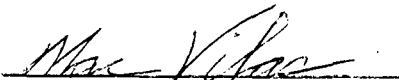
Page -2-

June 14, 1988

As such, it should be determined by Central Office how to address this matter, as no guidance on permit amendments, revisions, or the effects of such amendments on new regulations (such as the new tank rules), has been provided.

2. Lubrizol has failed to maintain an accurate and current Notice of Registration (31 TAC 335.6(c)).
3. Lubrizol has failed to provide an off-site treatment facility with notification of restricted waste management as required by 40 CFR 268.7(a)(1).

Signed:



Mac Vilas
Field Investigator

Approved:



W.J. Van Evers, Manager
Hazardous & Solid Waste

WJV/MV/nm

cc: Minor Hibbs, Chief, Permits Section
Hazardous & Solid Waste Division

III. FACILITY DESIGN, CONSTRUCTION AND OPERATION

A. Indicate the number of each type of specific facility authorized by the permit:

1. _____ Container Management Area (11)*
2. 3 Tanks (21)
3. # Surface Impoundments (_____)
4. _____ Waste Piles (_____)
5. _____ Land Treatment Facilities (_____)
6. _____ Landfills (_____)
7. _____ Incinerators (_____)
8. _____ Other (Describe) _____ (_____)

*Indicate the number of unpermitted facilities of each type in the parentheses (_____).

compliance plan for 2 surface impoundments

NOTE: Specific violations of permit provisions for authorized facility design, construction and operation should be described in the comments sections of the individual component facility checklists. The relevant section of the permit should be referenced in the comments sections of the checklists.

IV. FINANCIAL ASSURANCE/CLOSURE/POSTCLOSURE

A. Financial Assurance

1. Facility has established financial assurance consistent with 40 CFR Part 264, Subpart H and in an amount not less than that required by the permit.

\$94,000

N/A _____ YES ☒ NO _____

2. Facility has made adequate provision for adjusting the amount of financial assurance annually or in response to changes in facility operation.

N/A _{MV} _____ YES ☒ NO _____

3. If corrective action is required for this facility, list the corrective action assurance amount required in the permit:

Amount: \$1,950,000

4. Did call to Central Office confirm that this amount has been provided?

N/A _____ YES ☒ NO _____

B. Closure, Post Closure.

1. Facility has an adequate closure plan meeting the requirements of 40 CFR Part 264, Subpart G (264.110-264.115).

See closure/post closure checklist

N/A _____ YES _____ NO ☒

2. Facility has an adequate post-closure plan meeting the requirements of 40 CFR Part 264, Subpart G (264.117-264.120).

N/A ☒ YES _____ NO _____

3. Have circumstances occurred that would require closure of the facility under the terms of Section IV of the permit ?

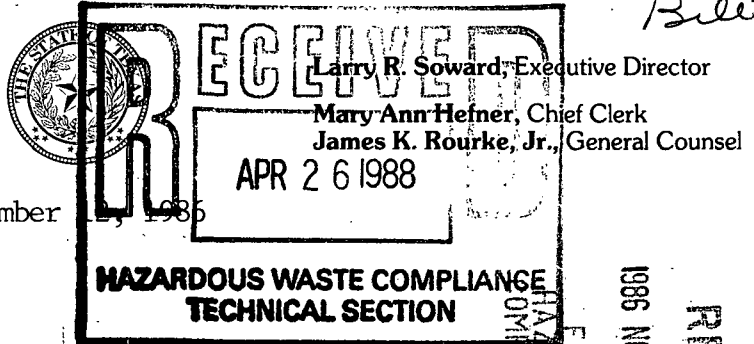
N/A _____ NO ☒ YES _____

Storage only III S.A
TEXAS WATER COMMISSION

1. Barb to go in
2. Doug - review

Bill

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



November 1, 1986

Mr. Sam Becker, Chief
Hazardous Materials Branch
U. S. Environmental Protection Agency
Region VI - 6H-C
1201 Elm Street
Dallas, Texas 75270

Re: The Lubrizol Corporation - Deer Park Facility
Industrial Solid Waste Registration No. 30324
Transmittal of Draft Hazardous Waste Permit, Compliance Plan, and
revised Preliminary Assessment

Dear Mr. Becker:

In accordance with the Memorandum of Agreement between the State of Texas and the U. S. Environmental Protection Agency, transmitted herewith is the draft hazardous waste permit, Compliance Plan, and revised Preliminary Assessment for The Lubrizol Corporation. Provisions V.AA., V.BB., V.DD., and Section VI. of the draft permit will implement the applicable requirements of the Hazardous and Solid Waste Amendments of 1984 (HSWA).

Questions or comments should be directed to the staff technician indicated below within thirty days from the date of this letter.

<u>Applicant</u>	<u>Technician</u>	<u>Permit No.</u>	<u>EPA I.D. No.</u>
The Lubrizol Corporation	Wayne R. Harry Carol Boucher	HW-50077 CP-50077	TXD-041067638

We have received your comments concerning the RCRA Preliminary Assessment (PA) for The Lubrizol Corporation submitted by your letter dated May 7, 1986. A Visual Site Inspection (VSI) was performed June 23, 1986 at the facility to provide additional information concerning the units addressed in the PA. As part of the PA/SI process, each active and inactive waste management unit at the facility has been evaluated to determine whether a release to the environment has occurred. A Remedial Investigation (RI) is recommended for facility units for which a release of hazardous waste or hazardous constituents has been documented, for facility units for which there is a high potential for a release, and for facility units for which insufficient information is available to make such determinations. No further action is recommended when sufficient information exists which indicates that no release to the environment has occurred or when an appropriate remedial investigation or corrective action is already in progress. Such actions will be formalized in the draft permit or the draft Compliance Plan.

Mr. Sam Becker
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November 12, 1986

Tank T-23X [Facility No. 13 on the TWC Notice of Registration (NOR)] is an above-grade, carbon steel tank in good condition secured on a concrete foundation. No leaks or spills were visible. Tank T-23X has been incorrectly described as containing Class I organic liquid and water. The tank contains sodium aluminate solution which is listed as a Class IH waste in the NOR. Lubrizol is currently using this sodium aluminate solution as a common ionic flocculent in water treatment. Lubrizol has requested that the TWC determine whether this secondary material is being used as an acceptable substitute for a commercial product and is excluded from the definition of a solid waste. The TWC is currently preparing a response and will request additional information if necessary for any future RCRA permitting actions. No releases were observed from this unit and none are expected in the future provided the unit is maintained and operated properly. In the context of the PA/SI, no further action is recommended.

Tank J-52 is an above-grade, insulated, carbon steel tank in good condition on a concrete foundation. No leaks or spills were visible. The tank contains spent sulfuric acid. Lubrizol claims that this spent sulfuric acid is used to produce virgin sulfuric acid and is specifically excluded from the definition of solid waste pursuant to 40 CFR 261.4(a)(7). Lubrizol has requested that the TWC determine whether this material is a solid waste. The TWC is currently evaluating this request and will prepare an appropriate response. No releases were observed from this unit and none are expected in the future provided the unit is maintained and operated properly. In the context of the PA/SI, no further action is recommended.

Tank WO-1 (Facility No. 04 on the TWC NOR) is an above-grade carbon steel tank in good condition which is secured on a concrete pad. The tank contains organic liquid and water which is presently listed as Class IH waste due to ignitability. A small amount of staining was noted on the surrounding gravel. During the site investigation, Lubrizol stated that the waste classification for this tank is incorrect and that the tank has never contained liquids with a flash point below 140°F. Lubrizol is currently in the process of changing the waste classification to Class I non-hazardous organic liquid and water. A remedial investigation is recommended to remove the stained gravel and any contaminated soil surrounding the tank.

Tanks CA-1 and J-42 (Facility Nos. 14 and 15 on the TWC NOR) are both above-grade, fiberglass-reinforced plastic tanks in good condition which are secured on concrete foundations and surrounded by 3.0-foot and 4.5-foot high containment walls, respectively. The tanks contain sodium sulfite scrubber water solution which is hazardous due to the characteristic of corrosivity. Liquid wastes were observed leaking from a pump attached to Tank CA-1 and draining into the facility

Mr. Sam Becker
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November 12, 1986

process wastewater treatment system. There were no leaks or spills noted around Tank J-42. Lubrizol has submitted complete technical information for these tanks as part of their Part B permit application for these tanks. This technical information was included as Attachments VIII and IX of the PA. In the context of the PA/SI, no further action is recommended. The TWC will continue to perform RCRA permitting actions for these tanks. Proper waste management procedures for spills and leakage from ancillary equipment shall be addressed in the permit.

Tanks C-5, C-6, C-22, M-26, M-28, M-29, M-31, L-6, and K-1 are above-grade carbon steel tanks in good condition which are secured on concrete foundations and surrounded by three-foot high containment walls. No spills or leaks were visible. These tanks contain mixed alcohols and water. Lubrizol considers this mixture a secondary material and has requested that the TWC determine whether this material is a solid waste. The TWC is preparing a response and will request additional information as necessary for future permitting actions. In the context of the PA/SI, no further action is recommended.

Site Investigations for the Bulk Storage Areas (Facility Nos. 22, 23, and 24 on the TWC NOR) were suggested in the original preliminary assessment due to a lack of detailed information about these units. During the recent VSI, the areas were observed to be concrete slabs which contained several 30-cu.yd. steel roll-off bins which were sloped to drains leading to the facility process wastewater treatment system. The bins contain Class II diatomaceous earth filter media, biological and domestic sewer sludge, sulfur waste scrap, and small amounts of Appendix VIII constituents as detailed in the PA. No releases were observed for these units and none are expected in the future provided that the areas are maintained and operated properly. No further action appears to be necessary and has been so stated in the revised preliminary assessment.

Site Investigations for the (new) Lift Station No. 1 and Tanks T1A and T1B were suggested in the original preliminary assessment due to a lack of detailed information about these units. The recent VSI has revealed that Lift Station No. 1 is a newly constructed unit which consists of Tanks T1A and T1B situated inside an open-top below-grade concrete vault. The tanks are API Separators which contain process wastewaters with small amounts of Appendix VIII constituents as detailed in the preliminary assessment. No releases were observed for this newly constructed facility and none are expected in the future provided the unit is maintained and operated properly. No further action appears to be necessary and has been so stated in the revised preliminary assessment.

Site Investigations for Tanks E1, E2, and E4 were suggested in the original preliminary assessment due to a lack of detailed information about these units. The recent visual site inspection has revealed that Tanks E1, E2, and E4 are above-grade carbon steel tanks in good condition which are secured on concrete pads. These tanks contain process wastewater with Appendix VIII constituents as detailed in the preliminary assessment. No releases were observed from these units and none are expected provided the unit is maintained and operated properly. No further action is recommended for these units.

Remedial investigations to include subsoil investigations such as soil borings and ground-water monitoring where appropriate are suggested for all other units for which site investigations were recommended in the original preliminary assessment.

Lubrizol submitted to the TWC by letter dated June 12, 1986, a list of additional wastes and waste management units at the Deer Park Plant site. The following units are now included in the revised preliminary assessment:

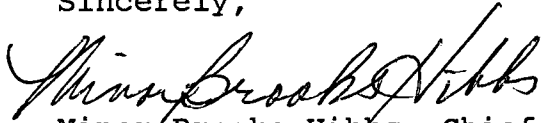
<u>NOR</u>	<u>Waste Management Unit</u>	<u>Waste Class</u>	<u>Status</u>
28	Tank WO-2	I	Active
29	Tank RA-10	II	Active
30	Tank WO-8	I	Active
31	Tank FO-21	I	Active
32	Tank WO-9	I	Active
33	Tank WO-10	I	Active
34	Tank BB-3	I	Active
35	Tank T/C-1	I	Active
36	Tank P-25	I	Active
37	Tank LAB-A [formerly below- grade storage tank (steel)]	IH	Active
38	Tank LAB-B (below-grade)	IH	Active
39	Bulk Storage Area	I	Active
40	Tank 156 W/O	I	Active
41	Drum Storage Area	I	Active

Additional information has also been submitted for Facility Nos. 2, 3, 5, 13, 16, 17, 21-24, 26, and 27 on the TWC NOR. This information has been considered and included in the revised preliminary assessment as appropriate.

Mr. Sam Becker
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November 12, 1986

Should you have any further questions or comments, please contact Wayne R. Harry of Facility Unit III at AC512/463-8174.

Sincerely,

A handwritten signature in cursive script, reading "Minor Brooks Hibbs". The signature is written in dark ink and is positioned above the printed name.

Minor Brooks Hibbs, Chief
Permits Section
Hazardous and Solid Waste Division

WRH:lab
Enclosure
cc: TWC Southeast Region Office - Deer Park

TECHNICAL SUMMARY

Permit No. HW-50077

EPA Permit No. TXD 041067638-0

Compliance Plan No. CP-50077

Application No. 10576

1. The Lubrizol Corporation has applied to the Texas Water Commission (TWC) for a permit to continue operation of an industrial solid waste storage facility for the management of Class I hazardous waste associated with their Deer Park plant. The company has also applied for a Compliance Plan which will require the operation of a Corrective Action Program to remediate ground-water quality at the facility to specified standards. These applications were filed to meet new TWC regulatory requirements established in response to the federal Resource Conservation and Recovery Act and State law. The applicant's waste management operations commenced before November 19, 1980. This is an existing facility under 31 Texas Administrative Code (TAC) 335.2 which may continue operating until such time as the TWC approves or denies these applications.

The Deer Park plant manufactures performance additives for lubricating oils, lubricating greases, and fuels. The facility is located north of State Highway 225 at 31 Tidal Road in Deer Park, Harris County, Texas. The site is in the watershed area of Segment 1006 of the San Jacinto River Basin (North Latitude 29°43'13", West Longitude 95°06'44").

The TWC and the Environmental Protection Agency (EPA) have entered into a joint permitting agreement (JPA) whereby EPA accepted the applicant's information submitted through the State as a federal application for purposes of implementing the Hazardous and Solid Waste Amendments of 1984 (HSWA).

The waste management units covered by the applications consist of four above-grade tanks and two surface impoundments. Hazardous wastes generated at the facility consist of discarded lab waste, spent equipment wash, and sodium sulfite solution. The four tanks proposed to be authorized in the permit have a total capacity of 38,630 gallons. The two surface impoundments addressed in the Compliance Plan have a combined surface area of approximately 24,000 square feet.

Ground water occurs beneath the facility at a depth of approximately 16-22 feet below land surface. The uppermost aquifer, consisting of interbedded marine clays, silts, and sand lenses of the Beaumont Formation, ranges in thickness from 2-6 feet. In the vicinity of the impoundments, the ground-water flow direction in the aquifer is towards Patrick's Bayou.

Contamination has been verified in the uppermost aquifer. The Compliance Plan requires a remedial investigation to be performed for the No. 1 Lift Station Solid Waste Management Unit (SWMU) and that a Corrective Action Program be performed for the Equalization Basin SWMU. The proposed Corrective Action Program consists of a recovery well system with discharge into the plant wastewater treatment system.

2. The Class I hazardous wastes managed at the facility include:
 - A. F003 - Discarded lab solvents which consist of spent non-halogenated solvents.
 - B. F005 - Spent equipment wash which consists of spent non-halogenated solvents.
 - C. Discarded lab samples which contain one or more of the following: n-butyl alcohol, formaldehyde, isobutyl alcohol, maleic anhydride, methanol, phenol, and xylene.
 - D. Sodium sulfite solution which exhibits the characteristic of corrosivity and has the EPA Hazardous Waste Number of D002.
3. The proposed permit and Compliance Plan are required by 31 Texas Administrative Code (TAC) 335.2 and 335.43, and Section 3005(c) of HSWA. A draft permit and a Compliance Plan have been prepared in accordance with applicable requirements of 31 TAC Section 335 and 305, which have been adopted under the authority of Section 4(c) of the Solid Waste Disposal Act, Article 4477-7, Revised Civil Statutes, and Section 5.103, Texas Water Code. The draft permit and Compliance Plan, if issued by EPA, will implement the applicable requirements of HSWA. In order for the applicant to have a fully effective RCRA permit, both the TWC and the EPA must issue the permit and Compliance Plan.

The proposed permit:

- A. Authorizes the permittee to store the wastes described above.
- B. Requires scheduled inspections of the facility to enable prevention of structural failures and to detect potential areas of environmental and/or human health concerns.
- C. Establishes contingency plans and emergency procedures.
- D. Does not authorize discharge of wastes to surface water or ground water.
- E. Requires the permittee to establish and maintain records of the wastes stored and shipped.
- F. Establishes closure requirements for the facility. Closure requirements include the removal of all waste and waste constituents from the tanks and the areas immediately surrounding the tanks for off-site disposal.
- G. Requires the permittee to provide financial assurance to provide for proper facility closure care.
- H. Includes standard permit provisions and other requirements pertaining to the management of industrial solid waste, including hazardous industrial solid waste. Standard permit Provisions V.A. through V.BB., V.DD., V.EE., and Provisions VI.A. through VI.E. apply to both State and federal portions of the proposed permit.

- I. Includes the following provisions which, upon issuance of the permit by EPA, will implement the applicable requirements of HSWA:

III.I. Reference to the Compliance Plan

V.AA. Corrective measures for releases from solid waste management units

V.BB. Waste minimization

V.DD. Dust Suppression

VI. Remedial Investigation

The proposed Compliance Plan:

for the Equalization Basin SWMU

- J. Defines the point of compliance and requires the company to perform compliance monitoring in specified point of compliance wells for five (5) years.
- K. Defines the Ground-water Protection Standard which specifies the hazardous constituent concentration limits which are to be achieved at the point of compliance by operation of the Corrective Action Program.
- L. Specifies procedures to determine if the Ground-water Protection Standard has been exceeded at the point of compliance.
- M. Defines the Corrective Action Program consisting of a recovery well system.
- N. Requires monitoring to measure the effectiveness of the Corrective Action Program.
- O. Authorizes the disposal of recovered ground water to the facility's on-site wastewater treatment system provided that this activity shall not violate the requirements of the facility's NPDES discharge permit.
- P. Requires the permittee to provide financial assurance for operation of the ground-water recovery system.

for the No. 1 Lift Station SWMU

- Q. Requires a remedial investigation to determine the necessity of corrective action.

The public notice should include the following language:

"This notice satisfies the requirements of the Resource Conservation and Recovery Act (RCRA), as amended, 42 U.S.C. §6901 et seq. and 40 CFR §124.10. The draft permit and Compliance Plan, if issued by the U. S. Environmental Protection Agency (EPA), will implement the requirements of the Hazardous and Solid Waste Amendments of 1984, amending the federal Solid Waste Disposal Act, as amended. The Texas Water Commission and the EPA have entered into a joint permitting agreement whereby permits may be

issued in Texas in accordance with the Texas Solid Waste Disposal Act, Article 4477-7, V.A.C.S., and the Hazardous and Solid Waste Amendments of 1984 (HSWA), until the State hazardous waste program receives interim or final authorization under RCRA to administer the requirements of the HSWA. In order for the applicant to have a fully effective RCRA permit, both the TWC and EPA must issue the permit and Compliance Plan. All provisions of the permit and Compliance Plan are fully enforceable under Texas law after issuance by the Texas Water Commission. The permit and compliance plan terms are also enforceable by EPA. EPA may participate in the informal public session of the public hearing."

4. The applicant did not propose variances or alternatives to required standards.
5. Before the permit and Compliance Plan are issued, amended, extended, or renewed, the TWC will provide an opportunity for a hearing to the applicant and persons affected. Public notice of these documents will specify a forty-five (45) day public comment period. Hearings are conducted by the TWC. The draft permit will be considered for issuance by the TWC after opportunity for public hearing is completed. Decisions are rendered by the Commission upon conclusion of the hearings and a review of the factual and legal issues presented. EPA will reach a decision on the HSWA portion of the joint permit based on the hearing record developed by TWC. If the comments received during the public comment period do not require a change in the draft permit, the permit will become effective immediately upon issuance. The EPA portion of the permit implementing the HSWA will become effective 30 days after the date of issuance if changes were required.

Decisions regarding the permit or compliance plan provisions issued under State authority may be reconsidered in response to a Motion for Rehearing and by appeal to a District Court in Travis County. Decisions regarding the permit provisions issued under federal authority may be reconsidered in accordance with the procedures of 40 CFR 124.19.

6. Additional information about this application may be obtained by contacting

A. For technical information:

Wayne R. Harry
Hazardous and Solid Waste Permits Section
Texas Water Commission
P. O. Box 13087, Capitol Station
Austin, Texas 78711

Carol Boucher
Hazardous and Solid Waste Enforcement Section
Texas Water Commission
P. O. Box 13087, Capitol Station
Austin, Texas 78711

B. For procedural and public hearing information:

Office of the Chief Hearings Examiner
Texas Water Commission
P. O. Box 13087, Capitol Station
Austin, Texas 78711

C. For HSWA information:

Jean Bolinske
Hazardous Waste Compliance Branch (6H-CP)
Environmental Protection Agency
1201 Elm Street
Dallas, Texas 75270

Prepared by:

Wayne R. Harry

Wayne R. Harry
Hazardous and Solid Waste Permits Section

Carol Boucher

Carol Boucher
Hazardous and Solid Waste Enforcement Section



TEXAS WATER COMMISSION
Stephen F. Austin State Office Building
Austin, Texas

PERMIT FOR INDUSTRIAL
SOLID WASTE MANAGEMENT SITE
issued under provisions of TEX.
REV. CIV. STAT. ANN. art. 4477-7

PERMIT NO. HW-50077-000

EPA PERMIT NO. TXD 041067638-0

DRAFT
SUBJECT TO REVISION

Name of Permittee: The Lubrizol Corporation
P. O. Box 158
Deer Park, Texas 77536

Site Owner: The Lubrizol Corporation
P. O. Box 158
Deer Park, Texas 77536

Registered Agent for Service: C. T. Corporation System
811 Dallas Avenue
Houston, Texas 77002

Classification of Site: Hazardous Waste Storage - On-site

The permittee is authorized to store wastes in accordance with limitations, requirements, and other conditions set forth herein. This permit is granted subject to the rules and other Orders of the Texas Water Commission and laws of the State of Texas. Nothing in this permit exempts the permittee from compliance with the applicable rules and regulations of the Texas Air Control Board.

This permit will be valid until cancelled, amended, or revoked by the Commission except that the authorization to store wastes shall expire midnight, 10 years after the date of permit approval.

All provisions in this permit stem from state authority. The provisions marked with an asterisk (*) stem from both state and federal authority.

APPROVED, ISSUED, AND EFFECTIVE this _____ day of _____

ATTEST: _____
For the Commission

DRAFT

SUBJECT TO REVISION

PERMIT NO. HW-50077
EPA PERMIT NO. TXD 041067638-0
NAME: The Lubrizol Corporation

CONTINUATION SHEET 2 of 21

I. Size and Location of Site

- A. The Lubrizol Corporation Deer Park Plant waste management facility is located on a 32.57-acre tract of land on Tidal Road approximately 0.5 miles northwest of the intersection of State Highway 225 and Tidal Road in the City of Deer Park, Harris County, Texas. The main plant entrance is located on Tidal Road and is identified as Gate 12. The site is in the watershed area of Segment 1006 of the San Jacinto River Basin (North Latitude 29°43'13", West Longitude 95°06'44").
- B. The area of the site on which waste management activities described by this permit are located is described by the legal description submitted with the application dated July 23, 1984 which is hereby made a part of this permit as "Attachment A."

II. Facilities and Operations Authorized

A. Wastes Authorized:

The permittee is authorized to manage hazardous industrial solid wastes listed in the application and described herein, subject to the limitations provided herein.

Wastes are those generated at this facility.

Hazardous wastes are limited to those within the Hazard Code Groups indicated below:

1. Hazard Code Group Codes (as prescribed by U.S. Environmental Protection Agency regulations in effect upon date of permit approval):

<u>x</u> Ignitable (I)	<u> </u> Acute Hazardous Waste (H)
<u>x</u> Toxic (T)	<u> </u> EP Toxic (E)
<u>x</u> Corrosive (C)	<u> </u> Reactive (R)

2. <u>Waste Descriptions</u>	<u>TWC Waste Class</u>	<u>Hazard Codes</u>
a. Sodium sulfite solution	IH	C
b. Spent equipment wash	IH	I,T
c. Discarded lab waste	IH	I,T

B. Facility Units and Functions Authorized:

The permittee is authorized to operate the following facility units for storage, subject to the limitations contained herein. All waste management activities are to be confined to authorized facility units, which shall hereafter be identified as numbered below:

DRAFT

SUBJECT TO REVISION

CONTINUATION SHEET 3 of 21

PERMIT NO. HW-50077

EPA PERMIT NO. TXD 041067638-0

NAME: The Lubrizol Corporation

1. Tank, closed top, maximum operating capacity of 11,330 gallons, carbon steel, above-grade, identified as Tank B-32 in the application submittal dated July 23, 1984, for storage of spent equipment wash and discarded lab waste.
 2. Tank, closed top, maximum operating capacity of 13,500 gallons, fiberglass-reinforced plastic, above-grade, identified as Tank CA-1 in the application submittal dated July 23, 1984, for storage of sodium sulfite solution.
 3. Tank, closed top, maximum operating capacity of 7,500 gallons, fiberglass-reinforced plastic, above-grade, identified as Tank J-42 in the application submittal dated July 23, 1984, for storage of sodium sulfite solution.
 4. Tank, closed top, maximum operating capacity of 6,300 gallons, carbon steel, above-grade, identified as Tank WO-6 in the application submittal dated July 23, 1984, for storage of spent equipment wash and discarded lab waste.
- C. Authorization to operate this facility is contingent upon maintenance of financial assurance pursuant to Provision IV.A. Authorization to begin operation of new or modified facility units is contingent upon compliance with Provision IV.A. and V.U.
- D. The facility units and operational methods authorized are limited to those described both herein and by the application and related plans and specifications which were included in the permit application submittals dated April 13, 1984, July 23, 1984, and September 17, 1985. All facility units and operational methods are subject to the terms and conditions of this permit and TWC rules. Prior to constructing or operating any facility unit in a manner which differs from either the related plans and specifications or the limitations of this permit, the permittee is required to:
1. Notify the TWC and submit plans and specifications for the proposed modification; and
 2. Receive written authorization of the Executive Director.
- E. Any proposed facility modifications, addition of units, or expansion in capacity which has not been addressed by the terms of this permit must be authorized in accordance with TWC amendment rules.

III. Facility Design, Construction, and Operation

- A. Facility design, construction, and operation must comply with this permit, TWC Rules, and be in accordance with the plans and specifications for design, construction, and operation approved herein. All plans and specifications submitted with the application dated April

DRAFT

SUBJECT TO REVISION

PERMIT NO. HW-50077
EPA PERMIT NO. TXD 041067638-0
NAME: The Lubrizol Corporation

CONTINUATION SHEET 4 of 21

13, 1984 and as revised by application submittals dated July 23, 1984 and September 17, 1985 are approved, subject to the terms of this permit and any other orders of the Texas Water Commission and are hereby incorporated by reference and made a part of this permit.

- B. All authorized facility units shall be clearly identified as numbered in Provision II.B. At a minimum, tanks are to have painted labels indicating "TWC PERMIT UNIT NO. (from Provision II.B.)," (for example, the tank identified as Tank B-32 in the application shall be labelled "TWC PERMIT UNIT NO. 1.")
- C. The permittee shall comply with the following minimum requirements for the tanks authorized by Provision II.B.:

1. The tanks shall be operated and maintained to have sufficient shell strength and, for closed top tanks, pressure controls to assure that they do not rupture or collapse. The minimum shell thicknesses specified below shall be maintained at all times. The wastes contained in the tanks shall not exceed the maximum operating volumes specified below:

<u>TWC Tank Permit No.</u> <u>(from Provision II.B.)</u>	<u>Minimum Shell</u> <u>Thickness</u> <u>(inches)</u>	<u>Maximum Operating</u> <u>Volume</u> <u>(gallons)</u>
1.	0.188	11,330
2.	0.300	13,500
3.	0.300	7,500
4.	0.125	6,300

2. Overfilling of the tanks shall be prevented by the use of overfilling control devices, which shall be maintained in good operating condition at all times.
- D. The entire waste management facility shall be designed, constructed, operated, and maintained to prevent inundation of and discharge from the areas surrounding the facility components authorized by Provision II.B., subject to the following requirements:

1. Each receipt and storage area, including unloading areas, shall be provided with a drainage control system which will collect spills and incident precipitation in such a manner as to:
- a. Preclude the release from the system of any collected spills, leaks, or precipitation, except as provided in Provision III.D.2. This requirement shall be met by, at a minimum, providing a base and sides which are free of cracks or gaps and are sufficiently impervious to contain leaks, spills, or precipitation until the collected material is removed, and providing curbs or sides designed to withstand a full hydrostatic head;

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SUBJECT TO REVISION

CONTINUATION SHEET 5 of 21

PERMIT NO. HW-50077

EPA PERMIT NO. TXD 041067638-0

NAME: The Lubrizol Corporation

- b. Minimize the amount of rainfall that is collected by the system;
 - c. Prevent run-on into the system from non-storage areas; and
 - d. Have sufficient capacity to contain the volume of the largest tank or 10% of the total tank capacity, whichever is greater, plus (for unenclosed areas) the volume of rainwater which would be collected by the 25-year, 24-hour rainfall event (10.0 in.).
 2. Collected spills, leaks, clean-up residues, and contaminated rainfall runoff including stormwater from all hazardous waste management containment areas shall be removed immediately after the spillage and/or rainfall event to prevent overflow of the collection system, by the following method(s):
 - a. Removal to an authorized facility unit;
 - b. Removal off-site for processing and/or disposal at an authorized industrial solid waste management facility; and/or
 - c. Discharge in accordance with a wastewater discharge permit.
- E. The annual site activity report required by Provision V.X. shall be submitted to the TWC Central Office and Southeast Region-Deer Park Office by January 21 of each year for the preceding year's activities. This annual report shall include, at a minimum, the following information:
 1. All information and records required by 31 Texas Administrative Code (TAC) 335.154;
 2. Volume of all wastes stored at the site;
 3. Summary of the annual cost estimate calculations and adjustments for facility closure; and
 4. Summary of the results of all annual tank inspections and shell thickness determinations.
- F. The permittee shall ensure that all waste analyses utilized for waste identification or verification are performed in accordance with methods specified in the current editions of "Test Methods for Chemical Analysis of Water and Wastes" or "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846) or other methods which are approved by the EPA. The permittee shall utilize only laboratories which follow a quality control/quality assurance program conforming to the program specified in "Test Methods for the Evaluation of Solid Waste, Physical/Chemical Methods" (SW-846). The permittee shall at all times maintain the waste analysis plan at the facility and make the plan available to regulatory authorities for inspection.

DRAFT

SUBJECT TO REVISION

CONTINUATION SHEET 6 of 21

PERMIT NO. HW-50077

EPA PERMIT NO. TXD 041067638-0

NAME: The Lubrizol Corporation

* G. The permittee shall ensure that all facility personnel successfully complete a program of classroom instruction and on-the-job training that teaches them to perform their duties in a way which ensures the facility's compliance with this permit.

- 1. At a minimum, all facility personnel shall receive training in the following areas:

- a. Waste management procedures relevant to the positions in which they are employed;
- b. Implementation of the facility's contingency plan;
- c. Emergency procedures and emergency equipment operation; and
- d. Facility regulatory compliance, including a review of the TWC permit(s) for the facility and applicable regulations relevant to the positions in which they are employed.

- 2. All facility personnel shall repeat a review of their initial training program at least once annually.

- 3. The following personnel records shall be maintained at the facility until facility closure or for at least three (3) years after a person's employment is terminated at the facility:

- a. The job title for each position at the facility related to hazardous waste management, and the name of the employee filling each job;
- b. A written job description for each position listed pursuant to Provision III.G.3.a. which includes the requisite skill, education, or other qualifications and duties of employees assigned to each position;
- c. A written description of the type and amount of both introductory and continuing training that will be given to each person filling a position listed pursuant to Provision III.G.3.a.; and
- d. Records that document that the training or job experience required by this permit has been given to and completed by facility personnel.

- H. All tanks, sumps, pumps, fire and spill control equipment, decontamination equipment, and all other equipment and structures authorized or required by this permit shall be maintained in good functional condition.

* I. The permittee shall comply with the corresponding Compliance Plan CP-50077 which incorporates additional ground-water monitoring and corrective action requirements. The Compliance Plan will not be affected when any terms of the permit expire.

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IV. Closure

- A. The permittee shall provide financial assurance for closure in accordance with the form outlined in 40 CFR Part 264, Subpart H in an amount not less than \$49,200. Financial assurance shall be secured and maintained in compliance with the financial assurance requirements of 40 CFR Part 264, Subpart H.
- B. The permittee shall submit to the Executive Director upon request such information as may be necessary to determine the adequacy of financial assurance.
- C. Facility closure shall commence:
 - 1. Upon direction of the Texas Water Commission or the Executive Director for violation of the permit, TWC Rules, or State Statutes; or
 - 2. Upon suspension, cancellation, or revocation of the terms and conditions of this permit concerning the authorization to store waste materials; or
 - 3. Upon abandonment of the site; or
 - 4. Upon direction of the Executive Director for failure to secure and maintain an adequate bond or other financial assurance as required in Provision IV.A.; or
 - 5. When necessary to comply with Provision IX.C.
- D. The permittee shall notify the Executive Director and the TWC Southeast Region Office in writing at least 90 days prior to conducting any closure activities, including partial and full facility closures.
- E. The permittee shall close the tanks and related appurtenances authorized by this permit according to the following minimum requirements:
 - 1. All tanks, pumps, piping, and any other equipment or structures which have come in contact with waste shall either be decontaminated by removing all waste or disposed of at an authorized industrial solid waste management facility.
 - 2. All hard-surfaced areas immediately surrounding the tanks shall be decontaminated.
 - 3. All wash water generated during decontamination activities shall be disposed of at an authorized industrial solid waste management facility.

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4. Verification of decontamination shall be performed by observing that no visible waste remains and by analyzing wash water, using EPA-approved techniques, for the waste constituents which have been in contact with the particular item being decontaminated. Decontamination shall be considered complete when the results of the wash-water analyses indicate the presence of 1.0 mg/l or less of each of the Appendix VIII of 40 CFR Part 261 constituents which have been in contact with the particular item being decontaminated.

F. Upon completion of closure of any unit(s) authorized by Provision II.B., the permittee shall submit to the Executive Director certification by both the permittee and an independent Registered Professional Engineer, that the unit(s) has been closed in accordance with all applicable rules and the terms of this permit. An engineering report shall be submitted along with the required certifications which includes a summary of the activities performed during closure and the results, including instrumental detection limits, of all analyses performed.

G. Upon completion of final closure of the facility, the permittee shall submit to the Executive Director certification by both the permittee and an independent Registered Professional Engineer, that the facility has been closed in accordance with all applicable rules and the terms of this permit.

V. Standard Permit Conditions

- * - A. The permittee has a duty to comply with all conditions of this permit. Failure to comply with any permit condition constitutes a violation of the permit and the Texas Water Code or the Texas Solid Waste Disposal Act, and is grounds for enforcement action, for permit amendment, revocation or suspension, or for denial of a permit renewal application.
- * - B. In order to continue a permitted activity after the expiration date of the permit, the permittee must apply for a new permit or renewal. Authorization to continue such activity will terminate upon the effective denial of said application.
- * - C. It shall not be a defense for a permittee in an enforcement action that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with the conditions of the permit.
- * - D. The permittee shall take all reasonable steps to minimize or correct any adverse impact on the environment resulting from noncompliance with this permit.
- * - E. The permittee shall at all times properly operate and maintain all facilities and systems of treatment and control (and related appurtenances) which are installed or used by the permittee to achieve compliance with the conditions of this permit.

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- * - F. The permittee shall furnish to the Executive Director, within a reasonable time, any reasonable information which the Executive Director may request to determine whether cause exists for amending, revoking, suspending, or terminating the permit. The permittee shall also furnish to the Executive Director, upon request, copies of records required to be kept by this permit.
- * - G. The permittee shall give notice to the Executive Director prior to physical alterations or additions to the permitted facility if such alterations or additions would require a permit amendment or result in a violation of permit requirements.
- * - H. Written approval from the Executive Director is required before beginning any change in the permitted facility or activity that would result in noncompliance with other permit requirements.
- * - I. Unless specified otherwise, the permittee shall report any noncompliance which may endanger health or the environment. Report of such information shall be provided orally within 24 hours from the time the permittee becomes aware of the noncompliance. A written submission of such information shall also be provided within 5 working days of the time the permittee becomes aware of the noncompliance. The written submission shall contain a description of the noncompliance and its cause; the potential danger to human health or the environment; the period of noncompliance, including exact dates and times; if the noncompliance has not been corrected, the anticipated time it is expected to continue; and, steps taken or planned to reduce, eliminate, and prevent recurrence of the noncompliance.
- * - J. Inspection and entry shall be allowed as prescribed in Texas Water Code, Chapter 26 and Chapter 27, and in Section 7 of the Solid Waste Disposal Act, as applicable.
- * - K.
 1. Monitoring samples and measurements shall be representative of the monitored activity.
 - 2. The permittee shall retain records of all monitoring information including all calibration and maintenance records and all original strip chart recordings for continuous monitoring instrumentation, copies of all reports required by this permit, the waste minimization certification required by §3002(d) of the Resource Conservation and Recovery Act, and records of all data used to complete the application for this permit, for a period of at least three years from the date of the sample, measurement, report, certification, or application. This period may be extended by request of the Executive Director.
 - 3. Records of monitoring activities shall include the following:
 - a. date, time and place of sample or measurement;

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- b. identified the individual who collected the sample or made the measurement;
 - c. date of analysis;
 - d. identity of the individual who performed the analysis;
 - e. the technique or method of analysis; and,
 - f. the results of the analysis or measurement.
-
- * - L. Any noncompliance other than that specified above, or any required information not submitted or submitted incorrectly, shall be reported to the Executive Director as promptly as possible.
 - * - M. This permit may be transferred only according to the provisions of 31 TAC Section 305.64 (relating to Transfer of Permits) and 31 TAC Section 305.97 (relating to Action on Application for Transfer).
 - * - N. All reports and other information requested by the Executive Director shall be signed by the person and in the manner required by 31 TAC Section 305.128 (relating to Signatories to Reports).
 - * - O. This permit may be amended, suspended and reissued, or revoked for cause. The filing of a request by the permittee for a permit amendment, suspension and reissuance, or termination, or a notification of planned changes or anticipated noncompliance, does not stay any permit condition.
 - * - P. This permit does not convey any property rights of any sort, or any exclusive privilege.
 - * Q. Monitoring results shall be provided at the intervals specified elsewhere in this permit.
 - * - R. Reports of compliance or noncompliance with, or any progress reports on, interim and final requirements contained in any compliance schedule of this permit shall be submitted no later than 14 days following each schedule date.
 - * - S. Where the permittee becomes aware that it failed to submit any relevant facts in a permit application or submitted incorrect information in an application or in any report to the Executive Director, it shall promptly submit such facts or information.
 - * - T. The permittee need not comply with the conditions of this permit to the extent and for the duration such noncompliance is authorized in an emergency order issued by the Commission.
 - * - U. For a new facility, the permittee shall not commence storage, processing, or disposal of solid waste; and for a facility being modified,

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the permittee shall not process, store or dispose of solid waste in the modified portion of the facility, until:

- 1. The permittee has notified the local TWC District Office and submitted to the Executive Director by certified mail or hand delivery a certification prepared and sealed by a professional engineer with current registration pursuant to the Texas Engineering Practice Act, and signed by the permittee. Required certification shall be in the following form:

This is to certify that construction of the following facility components authorized or required by TWC Permit No. HW-50077-000 has been completed, and that construction of said facilities has been performed in accordance with and in compliance with the design and construction specifications of Permit No. HW-50077-000:

(Description of facility components with reference to applicable permit provisions), and

- 2. The Executive Director has inspected the modified or newly constructed facility and finds it is in compliance with the conditions of the permit; or within 15 days of submission of the letter required by Provision V.U.1., the permittee has not received notice from the Executive Director of an intent to inspect, prior inspection is waived and the permittee may commence processing, storage, or disposal of solid waste.

* ~ V. The following shall be included as information which must be reported orally within 24 hours pursuant to Provision V.I.:

1. Information concerning release of any solid waste that may cause an endangerment to public drinking water supplies.
2. Any information of a release or discharge of solid waste, or of a fire or explosion from a facility, which could threaten the environment or human health outside the facility. The description of the occurrence and its cause shall include:
 - a. name, address, and telephone number of the owner or operator;
 - b. name, address, and telephone number of the facility;
 - c. date, time, and type of incident;
 - d. name and quantity of material(s) involved;
 - e. the extent of injuries, if any;

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- f. an assessment of actual or potential hazards to the environment and human health outside the facility, where this is applicable; and
 - g. estimated quantity and disposition of recovered material that resulted from the incident.
- * - W. The Executive Director may waive the five-day written notice requirement as specified in Provision V.I. in favor of a written report submitted to the Commission within 15 days of the time the permittee becomes aware of the noncompliance or condition.
- * - X. The permittee shall prepare and submit to the Executive Director an annual report required under 31 TAC 335.71. This annual report shall be submitted to the Commission on or before January 21 of each calendar year following the effective date of this permit.
- * - Y. Emissions from this facility must not cause or contribute to a condition of "air pollution" as defined in Section 1.03 of the Texas Clean Air Act or violate Section 4.01 of the Texas Clean Air Act, Article 4477-5, V.A.T.S. If the Executive Director of the Texas Air Control Board determines that such a condition or violation occurs, the permittee shall implement additional abatement measures as necessary to control or prevent the condition or violation.
- * - Z. The provisions of this permit are severable, and if any provision of this permit or the application of any provision of this permit to any circumstance, is held invalid, the application of such provision to other circumstances, and the remainder of this permit shall not be affected thereby.
- * - AA. The permittee shall notify the Commission of any release of hazardous waste or hazardous constituents that may have occurred from any solid waste management unit at the facility regardless of when the release occurred or may have occurred, and regardless of when waste was placed in any unit. Release of hazardous waste or hazardous constituents from any solid waste management unit regardless of when waste was placed in that unit or when the release occurred, will constitute grounds for: (1) a major permit amendment pursuant to §4(e)(8), Solid Waste Disposal Act, Art. 4477-7 V.T.C.S., as necessary to incorporate into the permit appropriate corrective action; (2) the adoption by the Commission of a Compliance Plan; or (3) other action deemed necessary by the Commission. Pursuant to such permit amendment, Compliance Plan, or other order or action, the permittee shall then take timely corrective action for such releases.
- * - BB. The permittee shall certify annually by October 1 for the previous year ending August 31, that the permittee:

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1. has a program in place to reduce the volume and toxicity of all hazardous wastes which are generated by the permittee's facility operation to the degree determined to be economically practicable; and
2. that the proposed method of treatment, storage, or disposal is that practicable method currently available to the permittee which minimizes the present and future threat to human health and the environment.

The certification is to be included in the operating record.

- CC. The permittee shall obey the requirements set forth in the Final Judgment rendered in the case titled The State of Texas vs. The Lubrizol Corporation, Cause No. 85-57-130, by the 127th Judicial District Court of Harris County, Texas. This judgment is incorporated into this permit by reference, so that the requirements of the judgment are made requirements of this permit as well.

* - DD. The permittee shall comply with 40 CFR 266.23(b).

* - EE. The permittee is required to meet all performance standards in this permit, regardless of whether the permit also contains a specific design or other requirement relating to the performance standard.

***VI. Remedial Investigation**

- A. The permittee shall conduct a remedial investigation in order to determine whether hazardous constituents listed in 40 CFR Part 261, Appendix VIII have been released into the environment from the following industrial solid waste management units:
 1. Above-grade tank WO-1;
 2. Below-grade tanks LAB-B, T3X, T4X, T5A, T5B, T7A, T7B, and T22X;
 3. Below-grade concrete storage tank (inactive);
 4. Lift Station No. 2;
 5. Aeration Lagoon;
 6. Original wastewater treatment surface impoundment (inactive); and
 7. Waste Piles (inactive).
- B. As a part of the remedial investigation, the permittee shall submit to the Executive Director of the TWC for approval a workplan within 60 days from the issuance date of this permit which will include but is not limited to the following items:

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- 1. A plan view drawing of the facility at a scale of 1 inch equal to not more than 200 feet which clearly shows:
 - a. The locations of tanks WO-1, LAB-B, T3X, T4X, T5A, T5B, T7A, T7B, and T22X;
 - b. Details of the wastewater treatment system including the locations and dimensions of the inactive surface impoundment, the Aeration Lagoon, and Lift Station No. 2;
 - c. The locations and dimensions of the inactive concrete storage tank, and the inactive waste piles;
 - d. All structures adjacent or near the above solid waste management units such as concrete pads, drainage ditches, and roadways; and
 - e. The drawing date, orientation, and scale.
- 2. Procedures for inspecting tank WO-1 which will, at a minimum, incorporate the following:
 - a. design information including construction standards, materials of construction, capacity, and past shell thickness data;
 - b. ultrasonic testing for shell thickness which includes, at a minimum:
 - (1) Taking measurements of the shell wall along three vertical rows spaced 120 degrees apart, at no greater than two foot vertical intervals. At least one measurement in each row shall be taken within one foot of the bottom of the tank. Measurements shall be concentrated up to the most common liquid level of the tank; and
 - (2) Taking at least 25% of all measurements within one inch of a seam ("heat affected zone"), if possible.
 - c. visual inspection of the exterior and interior of the tank for spills, leakage, and corrosion;
 - d. visual inspection of the area surrounding the tank for spills, leakage, and corrosion;
 - e. records of any maintenance, repairs, or spills involving the tank including dates and descriptions of events; and

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- f. soil sampling and clean-up procedures to be used if the above inspections reveal evidence of waste spills or leakage.
3. Procedures for inspecting the surface impoundment and the Aeration Lagoon which include the following:
- a. Visual inspection of the impoundments for dike structure, height, freeboard, and evidence of overtopping and erosion;
 - b. Evaluation of run-on and run-off patterns affecting the impoundments;
 - c. A hydrogeological evaluation of each impoundment site involving the following:
 - (1) Performance of a hydrogeologic assessment of the area to identify the uppermost aquifer beneath the unit. A soil boring program must be developed by the applicant to determine the strata encountered, saturated intervals and direction of ground-water flow. The workplan must specify the spacing, depth, and locations of boreholes. Samples from borings must be taken continuously from the surface to a depth of 25 feet and then at 5-foot intervals thereafter. Samples shall be described as to color, soil type according to the Unified Soil Classification System, other visual characteristics such as structure, texture, mineral composition, moisture, etc., and any visual or olfactory evidence of contamination. Samples description shall be performed by a qualified geologist or geotechnical engineer. Samples submitted for chemical analyses must be collected every 5 feet from the surface to the bottom of the borings and be analyzed in accordance with the United States Environmental Protection Agency publication SW-846, Test Methods for Evaluating Solid Waste, Physical/Chemical Methods 2nd Ed., 1982, (USEPA SW-846) for pH, specific conductance, TOC, TOX, and the following hazardous constituents: Phenol, Methyl Ethyl Ketone, Toluene, and EP Toxic metals;
 - (2) Plans for installation of a ground-water monitoring system, based upon the results of the soil boring program, consisting of a minimum of one background well located hydraulically upgradient of the unit, removed a sufficient distance so as not to be affected by the unit, and at least three wells located on the downgradient perimeter of the unit. The plan should include procedures for determining the ground-water gradient.

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More than three downgradient perimeter wells may be required to effectively sample the uppermost aquifer for hazardous constituents and additional background wells are recommended in order to provide adequate sample population for determining if background values have been exceeded. Procedures for installation of monitor wells which include detailed completion methods shall be submitted in the workplan. The entire vertical thickness of the appropriate flow zones of the uppermost aquifer must be sampled by wells. No monitor well screen length shall exceed 20 feet. Well clusters, consisting of individual monitor wells screened in successively deeper intervals, shall constitute a monitor well where flow zones of the uppermost aquifer are greater than 20 feet thick. Well construction and sampling materials shall be selected to avoid sample analysis interference. Monitor wells shall be logged during installation according to procedures outlined in Provision VI.B.3.c.(1) above. If existing wells are utilized as part of the ground-water monitoring system, the permittee shall provide sufficient boring data or conduct additional soil borings to provide the information required in Provision VI.B.3.c.(1);

- (3) Description of well development methods. Wells shall be installed utilizing the dry auger drilling method and adequately developed such that samples are not influenced by drilling activities;
- (4) Exact procedures for sampling and analysis of soil and water samples. The workplan shall include provisions for sample collection, sample preservation and shipment, analytical procedures, and chain of custody control. A statistical method must be submitted that will be used to compare upgradient monitor wells to background values to determine if a statistically significant increase over background has occurred. The plan shall include a schedule for collecting samples from monitor wells during 3 sampling events spaced at 2-month intervals and analyzed in accordance with USEPA SW-846 for pH, specific conductance, TOC, TOX, and the following hazardous constituents: Phenol, Methyl Ethyl Ketone, Toluene, and EP Toxic metals;
- (5) A preliminary ground-water report to be submitted as part of the work plan. This preliminary report shall contain, at a minimum, the following information regarding the ground-water investigation:
 - (a) a site map which depicts the location of all existing and proposed borings and monitor wells and lines of proposed geologic cross-sections;

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- (b) plans and time frames for submission of the hydrogeologic information required under Provision VI.B.3.c.(6) below; and
 - (c) well construction diagrams;
- (6) Submission of a Final Ground-Water Report. A Final Ground-Water Report shall be submitted with the report required by Provision VI.E. which contains at a minimum:
 - (a) contours of the ground-water surface based on measurements in piezometers and monitor wells, and inferred directions of ground-water flow;
 - (b) geologic cross-sections depicting the near-surface stratigraphy;
 - (c) logs of all soil borings and monitor wells; and
 - (d) results of analyses; and
- d. Sampling at the boundaries of these solid waste management units and other testing to establish the actual pattern and quantities of Phenol, Methyl Ethyl Ketone, Toluene, and VOC being emitted as air contaminants into the atmosphere from these units.
- 4. The permittee may elect to certify that no Appendix VIII constituents have been discharged to the Surface Impoundment and Aeration Lagoon in lieu of performing the inspection procedures noted in Provisions VI.B.3.a., b., c. and d. provided that confirming data is submitted from sufficient samples collected from the influent, sludge layers, and aqueous layers of these two impoundments and analyzed in accordance with USEPA SW-846 for pH, specific conductance, TOC, TOX, and the following hazardous constituents: Phenol, Methyl Ethyl Ketone, Toluene, and EP toxic metals.
- 5. Procedures for inspecting the inactive Concrete Storage Tank, Lift Station No. 2, and below-grade tanks LAB-B, T3X, T4X, T5A, T5B, T7A, T7B, and T22X, which will, at a minimum, incorporate the requirements of Provisions VI.B.5.a. and b. below; and procedures for inspecting the inactive waste piles which will, at a minimum, incorporate the requirements of Provisions VI.B.5.b.(1)-(3) below:
 - a. Design information including construction standards, materials of construction, and capacities;

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- b. Soil sampling and analyses for contamination of materials to include the following activities:
 - (1) Collection of no less than four representative samples of the soil surrounding each unit at appropriate locations and depths and which extend at least five feet below the bottom elevation of each unit;
 - (2) Submittal of plan-view and cross-sectional drawings which indicate the locations of all verification sampling;
 - (3) Analyses of collected soil samples for the following: Phenol, Methyl Ethyl Ketone, Toluene, EP toxic metals, TOC, and TOX performed by an independent analytical laboratory in accordance with USEPA SW-846.
- 6. An estimated volume of waste remaining in the inactive waste piles.
- 7. A time schedule including milestones for conducting the remedial investigation activities with time intervals between successive milestones not to exceed six months in duration.
- 8. A sample plan including sample locations, sampling methods, sampling equipment, sample handling procedures, analytical procedures, detection limits for each procedure, and sample quality assurance and quality control.
- 9. A safety plan describing the known hazards and risks identifying levels of protective clothing to be worn, describing decontamination procedures, and identifying any special requirements or training needs.
- C. The permittee shall immediately implement the approved work plan upon receipt of approval from the Executive Director of the TWC and must adhere to the approved plan with incorporation of any modifications made by the Executive Director.
- D. The permittee shall notify the TWC District Office at least 10 days prior to any sampling activity in order to afford District personnel the opportunity to observe sampling procedures.
- E. The permittee shall submit a report to the Executive Director within 60 days from the completion of the Remedial Investigation which contains the results of all inspections, observations, evaluations, and sampling events conducted as part of the Remedial Investigation.

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VII. Texas Air Control Board Permit Provisions

- A. This facility shall be constructed and operated in accordance with and subject to the Texas Clean Air Act (TCAA) as amended (Article 4477-5, V.A.T.S.) and all applicable Rules, Regulations, and Orders of the Texas Air Control Board (TACB). Said construction and operation is subject to any additional or amended Rules, Regulations, and Orders of the TACB adopted pursuant to the TCAA.
- B. All representations with regard to construction plans and operating procedures in the permit application are conditions upon which this permit is issued. The holder of this permit shall not vary from such representations if the change will cause a change in the method of control of emissions, the character of emissions, or will result in an increase in the discharge of the various emissions, unless he first makes an application to amend the permit and such amendment is approved.
- C. The appropriate regional office of the TACB shall be notified prior to the start of any required monitoring of the facility authorized by this permit in such a manner that a representative of the TACB may be present during monitoring.
- D. Upon request by the Executive Director of the TACB, the holder of this permit shall make sufficient stack sampling analyses or other tests, to prove satisfactory equipment performance. All sampling and testing procedures shall be approved by the Executive Director and coordinated with the regional representatives of the TACB.
- E. If sampling is required, the holder of this permit must contact the Quality Assurance Division of the TACB prior to sampling to obtain the proper data forms and procedures. The holder of this permit is responsible for providing sampling facilities and conducting the sampling operations at his expense.
- F. Information and data concerning production, waste analyses, facility inspections, operating hours, sampling and monitoring data if applicable, fuel type, and fuel sulfur content if applicable shall be maintained in a file at the plant site and made available at the request of personnel from the TACB or any local air pollution control agency having jurisdiction. Unless otherwise specified in this permit or otherwise represented in the permit application, the file shall be retained for at least three years following the date that the information or data is obtained.
- G. The facilities covered by this permit shall not be operated unless all associated air pollution abatement equipment is maintained in good working order and is operating properly during normal facility operations.

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- H. Emissions from this facility must not cause or contribute to a condition of "air pollution" as defined in Section 1.03 of the TCAA or violate Section 4.01 of the TCAA. If the Executive Director of the TACB determines that such a condition or violation occurs, the permit holder shall implement additional abatement measures as necessary to control or prevent the condition or violation.
- I. Acceptance of the permit constitutes an acknowledgement and agreement that the holder will comply with all applicable Rules, Regulations, and Orders of the TACB issued in conformity with the TCAA and the conditions precedent to the granting of this permit. Failure to comply with all provisions of this permit will subject the holder to the enforcement provisions of the TCAA, Article 4477-5 and the Solid Waste Disposal Act, Article 4477-7, V.A.T.S.

VIII. Incorporated Regulatory Requirements

- A. The following Texas Water Commission rules are hereby made provisions and conditions of this permit. Issuance of this permit with incorporated rules in no way exempts the permittee from compliance with any other applicable state statute and/or Commission Rule.
 - 1. 31 Texas Administrative Code (TAC) Subchapter A;
 - 2. 31 TAC Subchapter B;
 - 3. 31 TAC Section 335.152;
 - 4. 31 TAC Section 335.153-335.155; and
 - 5. 31 TAC Section 335.177.
- B. To the extent applicable to the activities authorized by this permit, the following provisions of 40 CFR Part 264, adopted by reference by 31 TAC 335.152, are hereby made provisions and conditions of this permit:
 - 1. Subpart B -- General Facility Standards;
 - 2. Subpart C -- Preparedness and Prevention;
 - 3. Subpart D -- Contingency Plan and Emergency Procedures;
 - 4. Subpart E -- Manifest System, Recordkeeping, and Reporting;
 - 5. Subpart G -- Closure and Post-closure;
 - 6. Subpart H -- Financial Requirements; and
 - 7. Subpart J -- Tanks;

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IX. Incorporated Application Materials

The permittee shall at all times maintain the following plans and schedules at the facility and make them available to all regulatory authorities for inspection:

A. Contingency Plan

The permittee shall follow the contingency plan, developed in accordance with 31 TAC 335.152 and 40 CFR Part 264 Subpart D, which was submitted with the permit application dated April 16, 1984 and as revised July 24, 1985, and which is hereby approved subject to the terms of this permit and any other orders of the Texas Water Commission. The contingency plan is hereby incorporated into this permit by reference as if set out fully herein. Any and all revisions to the plan shall become provisions and conditions of this permit upon the date of approval by the Commission.

B. Inspection Schedule

The permittee shall follow the inspection schedule, developed in accordance with 31 TAC 335.152 and 40 CFR Part 264.15, which was submitted with the permit application dated April 16, 1984 and as revised July 24, 1985, and which is hereby approved subject to the terms of this permit and any other orders of the Texas Water Commission. The inspection schedule is hereby incorporated into this permit by reference as if set out fully herein. Any and all revisions to the schedule shall become provisions and conditions of this permit upon the date of approval by the Commission.

C. Closure Plan

Facility closure shall be completed in accordance with the requirements of 31 TAC 335.152 and 40 CFR Part 264 Subpart G and the closure plan submitted with the permit application dated April 16, 1984 and as revised by letter dated December 15, 1984, which is hereby approved subject to the terms of this permit and any other orders of the Texas Water Commission. The closure plan is hereby incorporated into this permit by reference as if set out fully herein. Any and all revisions to the plan shall become provisions and conditions of the permit upon the date of approval by the Commission.

Attachment:

A - Legal Description

Attachment A

LEGAL DESCRIPTION

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Tract upon which waste management operations referred to in this permit application occur:

32.57 acres of land, more or less, situated in the George M. Patrick Survey, Abstract 624, and being out of and a part of that certain 636.14 acre tract as described in that certain deed dated September 22, 1944, executed by Tide Water Associated Oil Company in favor of Shell Oil Company, Incorporated, recorded in Volume 1331, page 603, Deed Records, Harris County, Texas:

Commencing at the northwest corner of the intersection of the Houston-LaPorte Highway and the Shell Refinery Private Road, the latter road being a continuation of West Avenue in the town of Deer Park; said Commencing Point marks the intersection of : Shell Refinery Coordinates 1000 north and 1000 west:

THENCE due North with the said Shell Refinery Coordinate 1000 west, a distance of 2000 feet to Shell Refinery's Coordinate 3000 north;

THENCE due East with the said Shell Refinery Coordinate 3000 north an approximate distance of 2530 feet to the center line of Patrick Bayou for the Beginning Point of the herein described 32.57 acre tract;

THENCE continuing due East with the Shell Refinery coordinate 3000 north, at 30.7 feet past a one-inch galvanized iron pipe, at 587.6 feet past the west right-of-way line of a county road, at 667.6 feet past the east right-of-way line of a county road continuing a total distance of 967.6 feet to a one-inch galvanized iron pipe set in the east line of the aforesaid Shell Oil Company, Incorporated, 636.14 acre tract;

THENCE North 00° 52' West with the east line of the said 636.14 acre tract, a distance of 1278.3 feet to a railroad rail located in the south right-of-way line of the Port Terminal Railroad;

THENCE South 89° 29' West with the south right-of-way line of said Railroad at 300 feet past east right-of-way line of a county road, at 380 feet past west right-of-way line of said county road, at 1154 feet past one-inch galvanized iron pipe, continuing a total distance of 1184.0 feet to a point in the center line of Patrick Bayou;

THENCE in a southerly direction with the center line of Patrick Bayou in all its meanders, an approximate distance of 1460 feet to the PLACE OF BEGINNING.

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TEXAS WATER COMMISSION
Stephen F. Austin State Office Building
Austin, Texas

COMPLIANCE PLAN NO. CP-50077
EPA I.D. NO. TXD041067638

This Compliance Plan is issued
in conjunction with Permit No.
HW-50077

Name of Permittee:	The Lubrizol Corporation P.O. Box 158 Deer Park, Texas 77536
Site Owner:	The Lubrizol Corporation P.O. Box 158 Deer Park, Texas 77536
Registered Agent for Service:	C.T. Corporation System 811 Dallas Avenue Houston, Texas 77002
Classification of Site:	Hazardous Waste Storage - On-Site

The Permittee is required to conduct the corrective action program in accordance with limitations, requirements, and other conditions set forth herein. This Compliance Plan is issued subject to the rules and other Orders of the Commission and laws of the State of Texas. Nothing in this Compliance Plan exempts the Permittee from compliance with the applicable rules and regulations and/or permits of the Texas Air Control Board.

This Compliance Plan remains in effect until amended or revoked by the Commission. This Compliance Plan will be reviewed upon expiration of the authorization to store industrial solid waste pursuant to Permit No. HW-50077 and modified as necessary to assure compliance with 31 TAC Chapters 305 and 335.

APPROVED, ISSUED AND EFFECTIVE this _____ day of _____, 19____.

ATTEST: _____

For the Commission

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COMPLIANCE PLAN NO. CP-50077

CONTINUATION SHEET 2 OF 20

Name: The Lubrizol Corporation

I. SIZE AND LOCATION OF SITE

- A. The industrial solid waste management facility is located on a 32.57 acre tract of land northwest of the intersection of State Highway 225 and Tidal Road in the City of Deer Park, Harris County, Texas. The main plant entrance is located approximately 0.5 miles north of this intersection on Tidal Road and is identified as Gate 12. The site is in the watershed area of Segment 1006 of the San Jacinto River Basin (North Latitude 29 degrees 43' 13", West Longitude 95 degrees 06' 44").
- B. The Compliance Plan is specific to those portions of the site as depicted on Attachment A and also identified below:
 - 1. Equalization Basin Solid Waste Management Unit (SWMU) - the Corrective Action Program applies pursuant to 31 TAC 335.167 for a release from a SWMU.
 - 2. Number 1 Lift Station SWMU - Remedial Investigation is required to determine the necessity of Corrective Action pursuant to 31 TAC 335.167.
- C. All provisions in this Compliance Plan stem from both state and federal authority.

II. CORRECTIVE ACTION PROGRAM - Components and Functions Authorized

The permittee is authorized to install and operate the following corrective action system components subject to the limitations contained herein. The Corrective Action System shall consist of the following components:

- A. Ground-Water Monitor Wells to sample ground-water quality;
- B. Ground-Water Recovery System to effect withdrawal of contaminated ground water by means of recovery wells; and
- C. Appurtenances for the collection and conveyance of recovered contaminated ground water to authorized disposal sites.

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CONTINUATION SHEET 3 OF 20

Name: The Lubrizol Corporation

III. GENERAL DESIGN, CONSTRUCTION, AND OPERATION REQUIREMENTS

- A. The proposed design, construction, and operation of the authorized components of the Corrective Action Program must comply with this Compliance Plan, Texas Water Commission Rules, and be in accordance with the plans and specifications for design, construction, and operation approved herein. Except as provided below and elsewhere, all plans submitted with the Compliance Plan application are approved, subject to the terms of this Compliance Plan, other orders of the Texas Water Commission, and directions of the Executive Director of the Texas Water Commission.
- B. For ground-water monitor wells to be constructed after issuance of this Compliance Plan, the Permittee shall submit a design proposal to the Executive Director for review thirty (30) days in advance of the anticipated date of installation. Well installation shall commence upon written approval of the Executive Director. The design proposal must satisfy the following requirements:
 1. The Permittee shall use well drilling methods which minimize potential adverse effects on the quality of water samples withdrawn from the well and which minimize or eliminate the introduction of foreign fluids into the borehole.
 2. Above the saturated zone the well casing may be two (2)-inch diameter or larger Schedule 40 or 80 polyvinyl chloride (PVC) rigid pipe or stainless steel or polytetrafluoroethylene (PTFE or "teflon"). Solvent cementing compounds shall not be used to bond joints and all connections shall be flush threaded. The PVC casing must bear the National Sanitation Foundation logo for potable water applications (NSF-pw). Below the saturated zone, the well casing shall be stainless steel or PTFE.

The Permittee may propose and justify for approval by the Executive Director an alternate well casing material that provides equivalent or better performance than PTFE or stainless steel with regard to yielding samples for ground-water quality analysis which are unaffected by the well casing material.

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CONTINUATION SHEET 4 OF 20

Name: The Lubrizol Corporation

3. The Permittee shall design and construct the intake portion of a well so as to allow sufficient water flow into the well for sampling purposes and to minimize the passage of formation materials into the well during pumping. The intake portion of the well shall consist of a commercially manufactured stainless steel or PTFE screen or approved alternative material. The annular space between the screen and the borehole shall be filled with clean siliceous granular material (i.e., filter pack) which has a proper size gradation to provide mechanical retention of the formation sand and silt. The well screen slot size shall be compatible with the filter pack size. The filter pack should extend no more than two feet above the well screen. The bottom of the well screen shall be capped with PTFE or stainless steel or approved alternate material.
4. A minimum of two (2) feet of granular bentonite shall immediately overlie the filter pack in the annular space between the well casing and the borehole. Where the saturated zone extends above the filter pack, granular bentonite shall be used to seal the annulus. Above the minimum two (2)-foot thick bentonite seal, the annular space shall be sealed with a cement/bentonite grout mixture which consists of 3 to 5 pounds of bentonite per 94-pound sack of cement with approximately 6.5 gallons of water. The grout shall be placed in the annular space by means of a tremie pipe.

The cement/bentonite grout mixture shall fill the annular space to within two (2) feet of the surface. A suitable amount of time shall be allowed for settling to occur. The annular space shall be sealed with concrete, blending into a cement apron at the surface which extends three (3) feet from the outer edge of the borehole.

5. Upon completion of installation of a well, the monitor well must be developed to remove any fluids used during the well drilling and to remove fines from the natural formation to provide a particulate-free discharge. Development shall be accomplished by reversing flow direction or surging the well. No fluids other than natural formation water shall be added during development.

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CONTINUATION SHEET 5 OF 20

Name: The Lubrizol Corporation

6. Each well shall be equipped with a locking cap.
7. A record of drilling and construction details demonstrating compliance with the items of this provision shall be kept on site. This record shall include:
 - . date/time of construction;
 - . drilling method and drilling fluid used;
 - . well location (0.5 ft.);
 - . bore hole diameter and well casing diameter;
 - . well depth (0.1 ft.);
 - . drilling and lithologic logs;
 - . depth to first saturated zone;
 - . casing materials;
 - . screen materials and design;
 - . casing and screen joint type;
 - . screen slot size/length;
 - . filter pack material/size;
 - . filter pack volume (how many bags, buckets, etc.);
 - . filter pack placement method;
 - . sealant materials;
 - . sealant volume (how many bags, buckets, etc);
 - . sealant placement method;
 - . surface seal design/construction;
 - . well development procedure;
 - . type of protective well cap;
 - . ground surface elevation (0.01 ft. MSL);
 - . top of casing elevation (0.01 ft. MSL); and
 - . detailed drawing of well (include dimensions).
8. The Permittee shall complete construction of each monitor well in accordance with the requirements of this Compliance Plan and shall certify such proper construction. The certification shall be prepared by a qualified geologist or geotechnical engineer. Each monitor well certification shall be accompanied by a certification report, including an accurate log of the soil boring, which thoroughly describes and depicts the location, elevations, material specifications, construction details, and soil conditions encountered in the boring for the well. A copy of the certification and certification report shall be kept on-site, and a second copy shall be submitted to the Executive Director. Required certification shall be in the following form: "This is to certify that installation of the following

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CONTINUATION SHEET 6 OF 20

Name: The Lubrizol Corporation

facility components authorized or required by TWC Compliance Plan No. CP-50077 has been completed, and that construction of said facilities has been performed in accordance with and in compliance with the design and construction specification of Compliance Plan No. CP-50077:" (Description of facility components with reference to applicable Compliance Plan provisions.)

9. The well number shall be permanently marked on each well at the site.
10. The Permittee shall measure and keep a record of the elevation of the top of each casing in feet above mean sea level to the nearest 0.01 foot.
11. If the Permittee installs any additional or replacement monitor wells, certification of this installation shall be submitted within 30 days of well installation. Certification shall be in accordance with Section III.B.8 of this Compliance Plan.
12. Monitor wells may be proposed for replacement at any time that the Permittee or Executive Director determines that the well integrity or materials of construction or well placement no longer enable the well to yield samples representative of ground-water quality. The Permittee shall submit a replacement monitor well design proposal and location to the Executive Director in accordance with this section.
13. The Permittee shall plug soil test borings and monitor wells removed from service after issuance of the Compliance Plan with a cement/bentonite grout mixture so as to prevent the preferential migration of fluids in the area of the borehole. Certification of each plugging shall be submitted to the Executive Director in accordance with Section III.B.8 of this Compliance Plan.
14. All ground water recovered from the uppermost and all hydraulically connected aquifers, including water purged from monitor wells, shall be managed as contaminated water.

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CONTINUATION SHEET 7 OF 20

Name: The Lubrizol Corporation

- C. The final design of the Corrective Action Program ground-water recovery system and supplemental monitor well system (capable of measuring the effectiveness of the Corrective Action Program) shall be submitted as a modification to this Compliance Plan as specified in Section VIII.A of this Compliance Plan.
- D. The authorized on-site disposal method for treatment system effluent is discharge into the neutralization tank (Lubrizol Tank T3X) of the facility wastewater treatment system.

IV. GROUND-WATER PROTECTION STANDARD

The Ground-Water Protection Standard defines the objective of ground-water quality restoration, with respect to Hazardous Constituents, which is to be achieved at the Point of Compliance by operation of the Corrective Action Program at this facility.

- A. Hazardous Constituents are specified in Table I, Column A.
- B. Concentration Limits are specified in Table I, Column B.
- C. Point of Compliance is designated on Attachment A and is further defined for purposes of this Compliance Plan by Table II, which identifies Point of Compliance wells for which compliance monitoring procedures will apply.
- D. Compliance Period shall have a duration of thirty (30) years commencing with the date of issuance of this Compliance Plan.

V. CORRECTIVE ACTION PROGRAM

A. Performance Standard

The Permittee shall conduct a Corrective Action Program to remove or treat in place any Hazardous Constituents specified in the Ground-Water Protection Standard (Section IV) that exceed the Concentration Limits in ground water between the Point of Compliance and the downgradient facility property boundary.

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CONTINUATION SHEET 8 OF 20

Name: The Lubrizol Corporation

- B. The Corrective Action Program shall consist of the system components of Section II, to be operated according to the plans and specifications as approved in Section III.A and the specifications of this Compliance Plan.
- C. Recovery Wells in the recovery well system shall be pumped so as to create and maintain a cone of depression in the saturated zone of the uppermost aquifer. The cone of depression must be of sufficient size to contain the area of contamination within the radius of influence of the recovery well system.
- D. The quantity of recovered ground water shall be measured continuously. Quantities shall be tabulated monthly and reported to the TWC according to Section VII.B. Records of totalizer readings shall be maintained at the facility.
- E. All collection pipes from recovery wells in the recovery well system shall be maintained in a leak-free condition at all times.
- F. Water level measurements shall be taken monthly in all Point of Compliance and Supplemental Monitor Wells to determine the ground-water table elevations. A water table map will be prepared monthly and reported to the TWC according to Section VII.B.1.
- G. The Permittee shall recommend modifications to this recovery well configuration or operation provisions at any time that it is determined that a cone of depression is not being created or maintained as required by Section V.C.

VI. GROUND-WATER MONITORING PROGRAM

The Permittee shall conduct a ground-water monitoring program to evaluate the effectiveness of the Corrective Action Program. The monitoring program shall include the monitor well system consisting of Background Wells, Point of Compliance Wells, and Supplemental Monitor Wells. Monitor wells will be sampled according to procedures contained in the sampling and analysis plan for the sampling requirements specified in Section VI.C. Achievement of the Ground-Water Protection Standard will be evaluated by the statistical procedures specified in Section VI.D.

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Name: The Lubrizol Corporation

A. The monitor well system shall consist of Point of Compliance Wells and Supplemental Monitor Wells located between the Point of Compliance and the downgradient facility property boundary. The Permittee shall maintain a monitor well system which yields representative ground-water samples from the first and second transmissive zones of the uppermost aquifer. Monitor wells constructed prior to issuance of this Compliance Plan may be utilized when specifically designated in the Ground-Water Protection Standard and as specified below:

1. Monitor wells specified in Table II as Point of Compliance and Supplemental Monitor Wells shall be capable of yielding samples that represent the quality of ground water passing the Point of Compliance.
2. The monitor well system shall include Background Monitor Wells as specified in Table II completed in the upper sand of the uppermost aquifer and be capable of yielding samples that represent the quality of ground water unaffected by the facility.

B. Sampling and Analysis Plan

1. Monitor wells designated in Table II as Point of Compliance Wells and Background Wells shall be sampled according to the Sampling and Analysis Plan, submitted to the Commission on June 2, 1986, and as modified by the Executive Director. The Sampling and Analysis Plan is hereby incorporated into this Compliance Plan by reference as if set out fully herein.
2. The collected samples shall be analyzed according to the analytical methods contained in the referenced plan and as specified in this Compliance Plan. The Permittee shall propose modifications as necessary to the Executive Director to reflect the most current analytical techniques and technical guidance provided by the U.S. Environmental Protection Agency for the analysis of hazardous constituents of 40 CFR Part 261 Appendix VIII. Any and all revisions to the plan shall become conditions of this Compliance Plan upon the date of approval by the Executive Director.

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CONTINUATION SHEET 10 OF 20

Name: The Lubrizol Corporation

3. The Permittee shall not be required to determine the concentration of any constituent for which the following applies:
 - a. The constituent is unstable in water;
 - b. The constituent is an inorganic compound which ionizes in water;
 - c. The constituent is a category which cannot be analyzed as a specific entity;
 - d. The constituent is an organometallic compound which cannot be analyzed as a specific entity;
 - e. Standards are not readily available for the constituent; or
 - f. No acceptable method is available for the constituent.
4. The Permittee shall obtain a list of constituents deemed appropriate by the EPA for ground-water monitoring from current guidance and regulations.
5. The Sampling and Analysis Plan shall be maintained at the facility and made available for inspection upon request.

C. Monitor Well System - Operational Requirements

1. Samples collected from the monitor well system shall be analyzed during the Compliance Period to meet three main objectives:
 - a. Characterization of the contaminant plume for the hazardous constituents of 40 CFR Part 261 Appendix VIII in accordance with 40 CFR 270.14(c)(4);
 - b. Recovery sampling to assess the effectiveness of the Corrective Action Program for remediating ground-water quality between the Point of Compliance and the downgradient facility property boundary; and
 - c. Compliance sampling to demonstrate that the Ground-Water Protection Standard has been achieved at the Point of Compliance. Specific requirements are set out below.

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CONTINUATION SHEET 11 OF 20

Name: The Lubrizol Corporation

2. Frequencies of sampling shall be by month, quarter or year, depending on the sampling objective. These periods of time are defined below:

- a. "Month" shall be a calendar month;
- b. "Quarter" shall be based on divisions of the calendar year (i.e., January through March, April through June, July through September, October through December). The quarter in which sampling is required to begin shall hereafter be designated as the "first quarter", and the following quarters shall be designated as "second", "third", and "fourth quarter", respectively; and
- c. "Year" shall be four consecutive quarters, beginning with the first quarter. Years shall be designated consecutively, beginning with the "first year", "second year", etc.

3. Contaminant plume characterization: All hazardous constituents of 40 CFR Part 261 Appendix VIII, as modified by Section VI.B, are to be analyzed from Background Wells and all Point of Compliance Wells of Table II during the first and third quarters of the first year of sampling.

- a. The Permittee shall determine a mean value of background concentrations for all available results for each hazardous constituent identified.
- b. The Permittee shall report the background values of hazardous constituents from Background Wells in a form appropriate for statistical analysis of Section VI.D., to include a mean and variance value, as appropriate. If other statistical procedures are to be used, background data must be reported appropriately.
- c. The background values of Hazardous Constituents shall be reported to the Executive Director within thirty (30) days of their determination, but no later than the end of the first year of sampling. In making this report, the Permittee

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COMPLIANCE PLAN NO. CP-50077

CONTINUATION SHEET 12 OF 20

Name: The Lubrizol Corporation

shall compare these results to Table I Columns A and B, and submit a request to modify this Compliance Plan to add or delete Hazardous Constituents and/or revise Concentration Limits of Table I, as appropriate.

4. Recovery Sampling: All Point of Compliance, Supplemental, and Recovery Wells of Table II shall be sampled monthly for pH, specific conductance, Total Organic Carbon, and Total Phenol. Field observations shall include a description of odor ("chemical", "sulfides", etc.) and appearance ("clean", "turbid", "yellowish", etc.) and water level measurements relative to Mean Sea Level.
 - a. Recovery Sampling shall be performed monthly, effective with the first complete calendar month occurring after issuance of this Compliance Plan.
 - b. For each well, monthly results for Total Organic Carbon and Total Phenol shall be averaged on a quarterly basis to determine a mean and variance for each parameter.
 - (1) Quarterly averaging shall commence after the first quarter of the first year of sampling.
 - (2) Means and variances shall be determined within the first month of the following quarter.
 - c. The mean and variance of Total Organic Carbon and Total Phenol shall be compared to respective background values determined from background wells according to the statistical analysis of Section VI.D, commencing with the second year of sampling required by this Compliance Plan. The background values shall be determined as follows:
 - (1) Background Wells of Table II shall be sampled monthly for Total Organic Carbon and Total Phenol effective with the first complete calendar month occurring after the issuance of this Compliance Plan.

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CONTINUATION SHEET 13 OF 20

Name: The Lubrizol Corporation

(2) Background analytical data shall be evaluated following the statistical procedures described in Section VI.D.

d. If a statistically significant increase compared to background for Total Organic Carbon or Total Phenol is indicated for a given well, then the Recovery Sampling Program shall continue for that well.

e. If no statistically significant increase compared to background for both Total Organic Carbon and Total Phenol is indicated for a given well, the Permittee shall respond as follows:

(1) Complete the remaining sampling event(s) of the quarter according to the Recovery Sampling requirements of Section VI.C.4.

(2) Commence Compliance Sampling in accordance with Section VI.C.5 upon the start of the next quarter of sampling.

(3) Notify the Executive Director in advance of changing a well from recovery to compliance sampling status, according to the reporting requirements of Section VII.B.

5. Compliance Sampling:

a. The Permittee shall sample quarterly and analyze for the Hazardous Constituents of Table I for any Point of Compliance, Recovery, or Supplemental Monitor Wells of Table II which have changed from Recovery Sampling to Compliance Sampling in accordance with Section VI.C.4.

b. Statistical comparisons between Point of Compliance Wells and Concentration Limits of Table I shall be performed in accordance with the procedures specified in Section VI.D for each individual Point of Compliance Well or Supplemental Monitor Well.

c. Once initiated, Compliance Sampling of a well shall continue on a quarterly basis until the Ground-Water Protection Standard is achieved in accordance with Section VII.A.

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CONTINUATION SHEET 14 OF 20

Name: The Lubrizol Corporation

6. Water level measurements relative to Mean Sea Level shall be made on a monthly basis in all wells specified in Table II of this Compliance Plan regardless of frequency of sampling.

D. Statistical Procedures

1. When evaluating the monitoring results collected pursuant to Section VI.C, the Permittee shall follow the statistical procedures described in 31 TAC 335.163, utilizing the Cochran's Approximation to the Behren-Fisher Student's t-test at the 0.05 level of significance, provided that the constituent has a sample coefficient of variation less than 1.00.
2. If the coefficient of variation of a constituent's background value is greater than or equal to 1.00, the Permittee must submit an application for a Compliance Plan modification for an alternate statistical method within 90 days of making this determination. The proposed procedure must provide a reasonable confidence that a real difference will be indicated. It must be appropriate for the distribution of the data used to establish background values and provide a reasonable balance between the probability of falsely identifying a significant difference and the probability of failing to identify a significant difference.

VII. RESPONSE AND REPORTING

A. Ground-Water Protection Standard Achieved

1. Achievement of the Ground-Water Protection Standard (Section IV) for each Point of Compliance and Supplemental Monitor Well is defined by the results of the statistical analyses of Section VI.D wherein the concentrations of Hazardous Constituents of Table I have been reduced by the Corrective Action Program (Section V) to concentrations that do not exhibit a statistically significant increase when compared to the Concentration Limits of Table I.
2. Individual Supplemental and Recovery Wells of Table II shall be considered compliant with the Ground-Water Protection Standard when no statistically significant increase is indicated for each Hazardous

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CONTINUATION SHEET 15 OF 20

Name: The Lubrizol Corporation

Constituent of Table I for two (2) consecutive quarterly sampling events. The Permittee shall note in the semi-annual reports of Section VII.B the compliant status of the well.

3. Point of Compliance Wells of Table II shall continue to be sampled according to Section VI.C.5 until the Ground-Water Protection Standard has been achieved in all Point of Compliance Wells.
4. The Permittee must assure that monitoring and corrective action measures necessary to achieve compliance with the Ground-Water Protection Standard are taken during the thirty (30)-year Compliance Period described in Section IV.
 - a. If the Ground-Water Protection Standard is achieved during the Compliance Period, the Permittee may apply to amend this Compliance Plan to reduce the Corrective Action Program to the extent necessary to demonstrate by means of a ground-water monitoring program that the Ground-Water Protection Standard will not be exceeded during the remainder of the Compliance Period.
 - b. If the Ground-Water Protection Standard is not achieved during the Compliance Period, the Corrective Action Program must continue until the Ground-Water Protection Standard has not been exceeded in Point of Compliance Wells of Table II for three (3) consecutive years.

B. Reporting Requirements

1. Water table maps prepared according to Section V.F shall be evaluated by the Permittee with regard to:
 - a. Development and maintenance of a cone of depression;
 - b. Directions of ground-water flow;
 - c. Minimum and maximum gradients within the cone of depression;

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CONTINUATION SHEET 16 OF 20

Name: The Lubrizol Corporation

- d. Calculated minimum and maximum ground-water flow velocities according to the minimum and maximum gradients within the cone of depression;
 - e. Directions of minimum and maximum flow velocities; and
 - f. Effectiveness of hydrodynamic control of the contaminated zone.
2. A written report with supporting maps and tables shall be prepared and submitted by January 21 and July 21 of each year to include:
- a. A narrative summary of the evaluations made in Section VI.C for the preceding six (6)-month period. These periods shall be January 1 through June 30 and July 1 through December 31.
 - b. Maps of the contaminated area depicting concentrations of Total Organic Carbon greater than 5 mg/l and Total Phenol greater than 0.1 mg/l, in a form appropriate for the distribution of data and acceptable to the Executive Director.
 - c. Monthly tabulations of quantities of recovered ground water.
 - d. A table, in a form acceptable to the Executive Director, listing the status of each well of Table II with regard to recovery or compliance sampling, results of statistical tests, and results of sample analyses.
 - e. Summary of any changes made to the Corrective Action Program.
 - f. Summary of operational difficulties and repairs.
 - g. Recommendation for any changes.
 - h. Any other items requested by the Executive Director.
3. A monthly report with supporting maps and tables, in a format acceptable to the Executive Director, shall be submitted by the twenty-first (21st) of each month for the preceding month for sample data collected in accordance with Section VI.C.4.

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CONTINUATION SHEET 17 OF 20

Name: The Lubrizol Corporation

- a. The report shall include the results of analyses for pH, specific conductance, Total Organic Carbon, Total Phenol, water level elevation relative to Mean Sea Level, odor, and appearance.
- b. This information may be incorporated with the semi-annual reports of Section VI.C.3 for the months of December and June.

C. Other Requirements

If the Permittee determines that the Corrective Action Program required by this Compliance Plan no longer satisfies the requirements of 31 TAC 335.167, he must, within 90 days of making this determination, submit an application for a modification to make any appropriate changes to the Corrective Action Program which will satisfy the regulations.

VIII. COMPLIANCE SCHEDULE

- A. Within 90 days of the issuance of this Compliance Plan, the final design specifications of the ground-water recovery system shall be submitted as an application for modification to this Compliance Plan. The modification shall include a schedule of implementation of the Corrective Action Program.
- B. Within 30 days of the issuance of this Compliance Plan, a remedial investigation plan shall be submitted for review by the Executive Director for the No. 1 Lift Station as shown on Attachment A.
 1. The investigation plan shall contain provisions to determine the extent of ground-water contamination associated with the No. 1 Lift Station, the rate of contaminant migration, and the concentration of waste constituents in the ground water.
 2. The investigation plan shall contain a schedule for implementation.
 3. The results of the investigation shall be submitted to the Executive Director within 180 days of the date of approval of the investigation plan by the Executive Director.

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Name: The Lubrizol Corporation

4. If the investigation results indicate that hazardous constituents as listed in the 40 CFR Part 261 Appendix VIII, as modified by Section VI.B, are present in the ground water in the vicinity of the No. 1 Lift Station, the Permittee shall submit an application for modification of the Compliance Plan to include the No. 1 Lift Station within 90 days of submittal of the investigation report. The modification shall include corrective action as required by 40 CFR 264.101.

IX. FINANCIAL ASSURANCE

The Permittee shall provide financial assurance for operation of the Corrective Action Program in a form acceptable to the Executive Director in an amount not less than \$1,950,000. Financial assurance shall be secured and maintained in compliance with TWC regulations on hazardous waste financial requirements (31 TAC 335.152 and 40 CFR Part 264 Subpart H).

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CONTINUATION SHEET 19 OF 20

Name: The Lubrizol Corporation

TABLE I. Table of Hazardous Constituents and Concentration Limits
for the Ground-Water Protection Standard

Column A - Hazardous Constituents	Column B - Concentration Limits (mg/l)
Barium	1.0
2,4 Dimethylphenol	N.D. (0.002)
Ethylbenzene	N.D. (0.001)
Phenol	N.D. (0.002)
Toluene (Methylbenzene)	N.D. (0.001)
Xylene	N.D. (0.001)

N.D. = Non-detectable at Method Detection Limit as determined for site background by the analytical methods of the United States Environmental Protection Agency publication SW-846 Test Methods for Evaluating Solid Waste, 2nd. Ed., 1982, (USEPA SW-846). Method Detection Limit is indicated in parentheses.

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CONTINUATION SHEET 20 OF 20

Name: The Lubrizol Corporation

Table II. Designation of Wells by Function

A. Point of Compliance Wells

EQ - 1
EQ - 2
EQ - 3
EQ - 4

B. Supplemental Monitor Wells (Proposed)

C. Background Wells

AE - 1
AE - 2

D. Recovery Wells (Proposed)

DRAFT

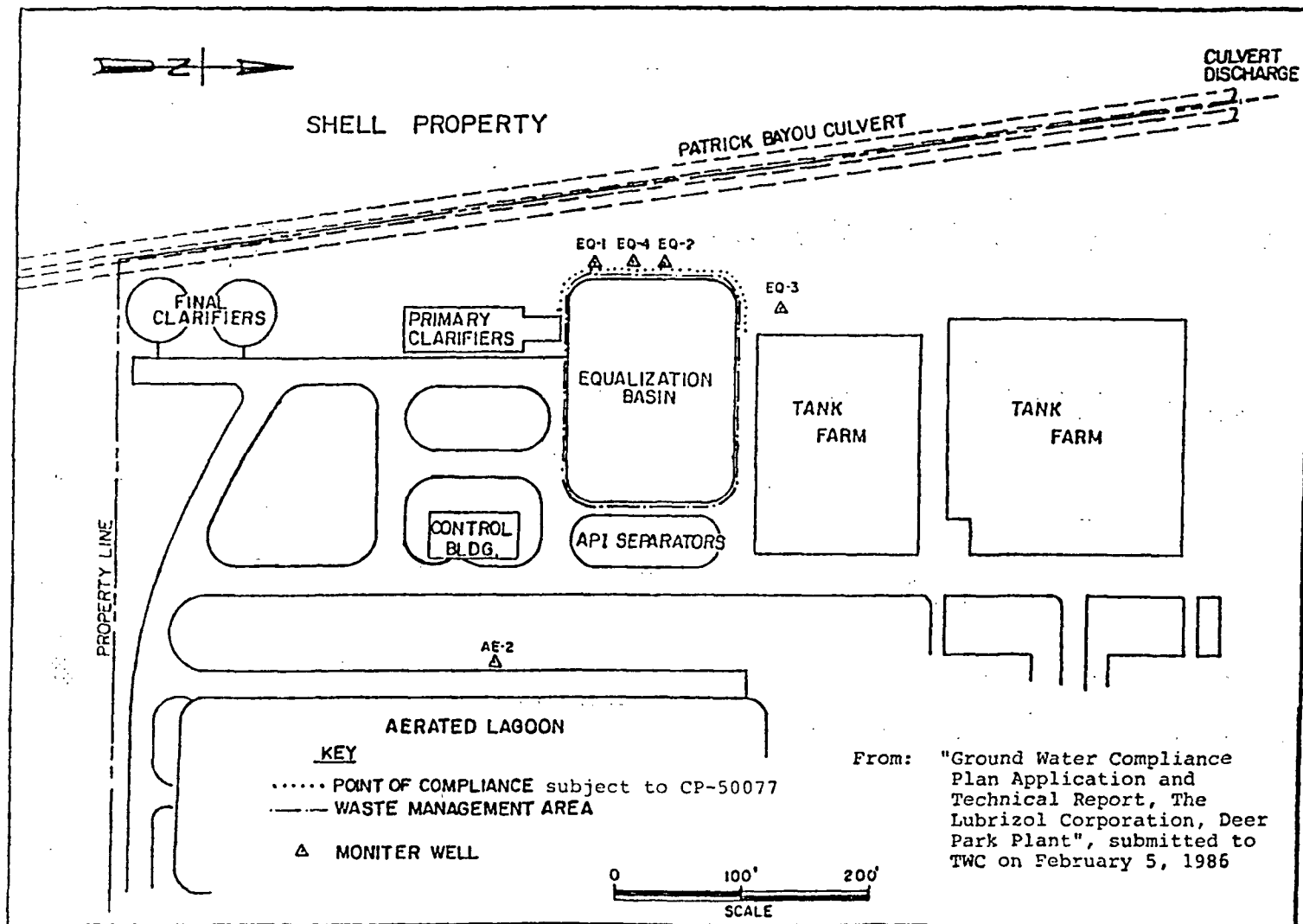
SUBJECT TO REVISION

COMPLIANCE PLAN NO. CP-50077

Name: The Lubrizol Corporation

ATTACHMENT A

SHEET 1 of 2



DRAFT

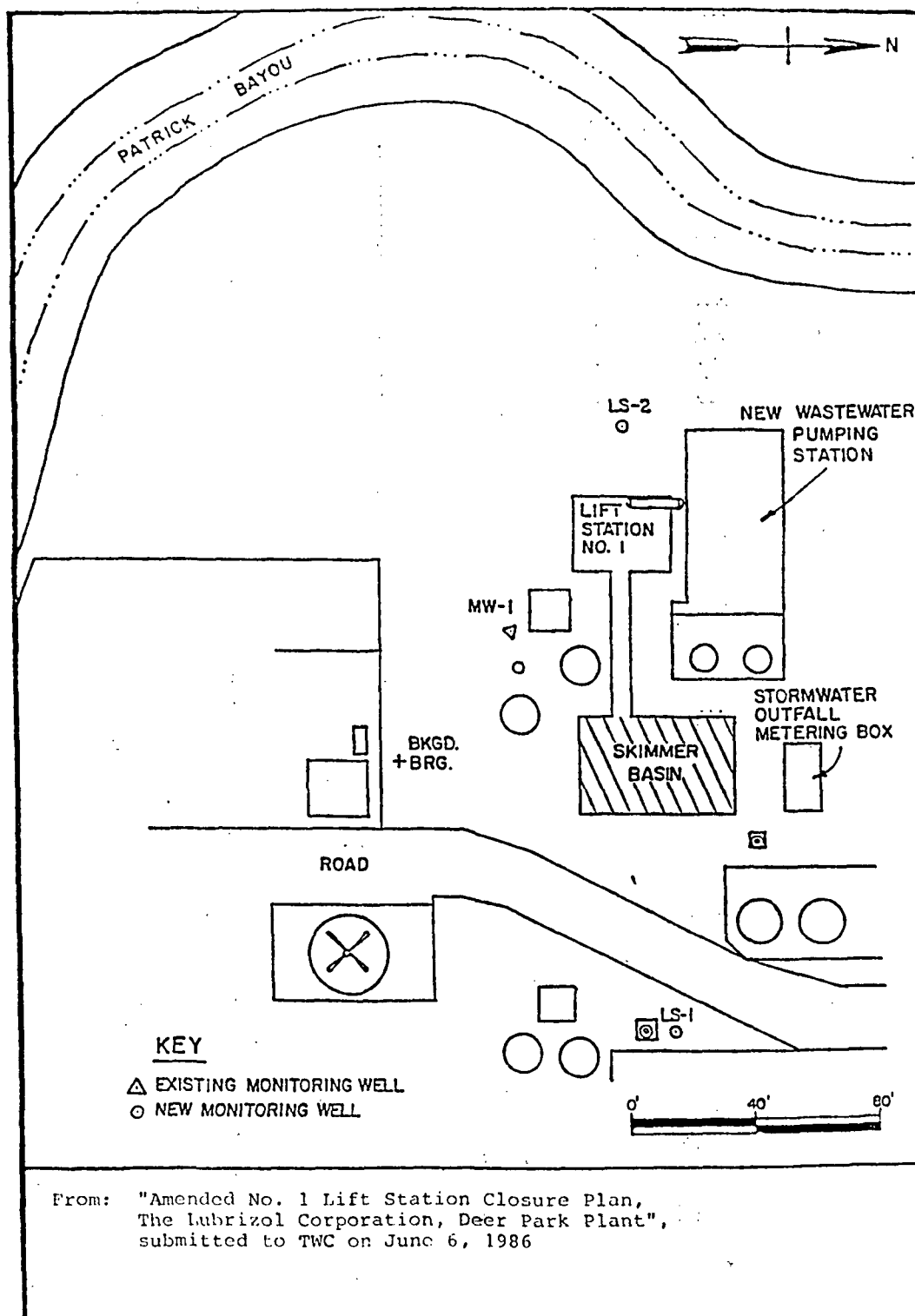
SUBJECT TO REVISION

COMPLIANCE PLAN NO. CP-50077

ATTACHMENT A

Name: The Lubrizol Corporation

SHEET 2 of 2



RCRA FACILITY ASSESSMENT EVALUATION
PRELIMINARY REVIEW AND VISUAL SITE INSPECTION

(NO SAMPLING VISIT)

Region VI, Technical Compliance Section

FACILITY'S NAME(S): Lubrizol Corporation - Deer Park

EPA ID NUMBER: TXD041067638

ADDRESS: P. O. Box 158, Deer Park, Texas 77536

LOCATION: N. of St. Hwy. 225 @ 31 Tidal Reed (Lat. 29°43'13" Long. 95°06'44")

SITE DESCRIPTION: 33 Ac. Manufacturer of performance additives for lubricating oil

DATE OF INSPECTION: 6-23-86 VSI CONDUCTED BY: Texas Water Commission

PREPARED BY: Texas Water Commission DATE PREPARED: 11-12-86

DATE RECEIVED 6H-CT: 4-26-88

REVIEWED BY: H. Gorrod - EPA DATE REVIEWED: 5-11-88

FACILITY STATUS: Active

ANY ON-GOING STATE/FED 264, 265, or 270 CORRECTIVE ACTION OR CERCLA ACTION: Yes -

TWC Corrective Action on GWM for Old Lift Station #1 and Equalization Basin

DOES FACILITY HAVE A CERCLA FILE? YES X NO

Was a CERCLA PA/SI performed at this facility: 7-11-85

DOES FACILITY HAVE UIC WELL? YES NO X

TYPE OF DRINKING WATER SUPPLY WITHIN A 3-MILE RADIUS: Houston Public Water

Supply. Individual wells from Evangeline Aquifer @ 600-feet.

TARGET POPULATION WITHIN A 3-MILE RADIUS: Industrial, commercial, undeveloped

and residential are found within one mile. All adjacent property is industrial.

Est. population within 3 miles is 3-5,000.

RECOMMENDATIONS: X R.F.I. I.M. No Further Action under RFA
(Indicate only one unless I.M. is marked)

X 3004(u) 3007

Possible Enforcement Action: 3008(a) 3008(h)

I. EVALUATIONA. NUMBER OF SWMU(s)/AOC(s) INVESTIGATED DURING THE PR/VSI: 711. NUMBER OF SWMU(s) INVESTIGATED DURING THE PR/VSI: 71

<u>LIST OF SWMU(s)</u>	<u>REGULATED BY RCRA*</u> (SUBTITLE C)	<u>STATUS**</u>
1) Storage Tank - (Concrete Box)	N	I
2) Bulk Storage - Trash Bins	N	A
3) Tank C-61	N	A
4) Tank W0-1	Y	A
5) Tank W0-3	N	A
6) Tank W0-5	N	A
7) Tank W0-6	Y	A
8) Tank T-19P	N	A
9) Tank T-19W	N	A
10) Tank T-19X	N	A
11) Tank T-19Y	N	A
12) Tank T-20X	N	A
13) Tank T-23X	Y	A
14) Tank CA-1	Y	A
15) Tank J-42	Y	A
16) Tank H-6	N	
17) Tank Car Shell	Y	I
18) Tank B-32	Y	A
19) Bulk Storage Area	N	
20) Drum Storage Area	Y	A
21) Container Storage Area	Y	A
22) Bulk Storage Area	N	A
23) Bulk Storage Area	N	A
24) Bulk Storage Area	N	A
25) Tank RA-3	N	A
26) Tank WQ-4	N	A
27) Tank H-73	N	A
28) Tank WQ-2	N	A
29) Tank RA-10	N	A
30) Tank WQ-8	N	A
31) Tank FO-21	N	A
32) Tank WQ-0	N	A
33) Tank WQ-10	N	A
34) Tank BB-3	N	A
35) Tank T/C-1	N	A
36) Tank P-25	N	A
37) Tank Lab A	Y	A
38) Tank Lab B	Y	A
39) Asbestos Storage Bin	N	A
40) Tank 156-W/O	N	A
41) Drum Storage Area	N	A
42) Lift Station No. 1 (Old)	Y	I
43) Equalization Lagoon	Y	I

* Y-Yes, N-No

** Active, Inactive, or Closed (A, I, & C)

<u>LIST OF SWMU(s)</u>	<u>REGULATED BY RCRA*</u> (SUBTITLE C)	<u>STATUS**</u>
44) Tank J-52	Y	A
45) Lift Station No. 1 (New)	N	A
46) Lift Station No. 2	N	A
47) Tank T-1A; API Separator	N	A
48) Tank T-1B; API Separator	N	A
49) Tank T-3X; Neutralization	N	A
50) Tank T-4X; Neutralization	N	A
51) Tank T-22X; Flocculation	N	A
52) Tank T-5A; Clarification	N	A
53) Tank T-5B; Clarification	N	A
54) Wastewater Aeration Lagoon	N	A
55) Tank T-7A; Clarification	N	A
56) Tank T-7B; Clarification	N	A
57) Tank E-1; Stormwater	N	A
58) Tank E-2; Stormwater	N	A
59) Tank E-4; Stormwater	N	A
60) Surface Impoundment	N	I
61) Waste Piles	N	I
62) Tank C-5; Mixed Alcohol	Y	A
63) Tank C-6; Mixed Alcohol	Y	A
64) Tank C-22; Mixed Alcohol	Y	A
65) Tank C-26; Mixed Alcohol	Y	A
66) Tank M-26; Heavy Alcohol	Y	A
67) Tank M-28; Heavy Alcohol	Y	A
68) Tank M-29; Heavy Alcohol	Y	A
69) Tank M-31; Heavy Alcohol	Y	A
70) Tank L-6; Mixed Alcohol	Y	A
71) Tank K-1; Mixed Alcohol	Y	A

*Y-Yes, N-No

**Active, Inactive, Closed (A, I, & C)

2. AREA(s) OF CONCERN: 0

C. NUMBER SWMU(s) TO BE INCLUDED IN THE RFI: 13
(Except RCRA units subject to Subpart F refer to Section E)

1. NUMBER OF SWMU(s) AT WHICH RELEASES HAVE BEEN IDENTIFIED: 3

<u>LIST OF SWMU(s)</u>	<u>RELEASE TO</u>	<u>NOTED DOCUMENTATION OF RELEASE</u>
1) Storage Tank - Concrete Box (01)	Soil/GW	This below grade, open topped reinforced concrete tank hold filter cake and Class II waste with small amounts of Appendix VIII constituents - phenol, MEK, toluene, plus barium and chromium compounds. Soil samples, taken preparatory to closure, had significant concentrations of barium, chromium, and TOC.

<u>LIST OF SWMU(s)</u>	<u>REGULATED BY RCRA*</u> <u>(SUBTITLE C)</u>	<u>STATUS**</u>
44) Tank J-52	Y	A
45) Lift Station No. 1 (New)	N	A
46) Lift Station No. 2	N	A
47) Tank T-1A; API Separator	N	A
48) Tank T-1B; API Separator	N	A
49) Tank T-3X; Neutralization	N	A
50) Tank T-4X; Neutralization	N	A
51) Tank T-22X; Flocculation	N	A
52) Tank T-5A; Clarification	N	A
53) Tank T-5B; Clarification	N	A
54) Wastewater Aeration Lagoon	N	A
55) Tank T-7A; Clarification	N	A
56) Tank T-7B; Clarification	N	A
57) Tank E-1; Stormwater	N	A
58) Tank E-2; Stormwater	N	A
59) Tank E-4; Stormwater	N	A
60) Surface Impoundment	N	I
61) Waste Piles	N	I
62) Tank C-5; Mixed Alcohol	Y	A
63) Tank C-6; Mixed Alcohol	Y	A
64) Tank C-22; Mixed Alcohol	Y	A
65) Tank C-26; Mixed Alcohol	Y	A
66) Tank M-26; Heavy Alcohol	Y	A
67) Tank M-28; Heavy Alcohol	Y	A
68) Tank M-29; Heavy Alcohol	Y	A
69) Tank M-31; Heavy Alcohol	Y	A
70) Tank L-6; Mixed Alcohol	Y	A
71) Tank K-1; Mixed Alcohol	Y	A

*Y-Yes, N-No

**Active, Inactive, Closed (A, I, & C)

2. AREA(s) OF CONCERN: 0

C. NUMBER SWMU(s) TO BE INCLUDED IN THE RFI: 13
(Except RCRA units subject to Subpart F refer to Section E)

1. NUMBER OF SWMU(s) AT WHICH RELEASES HAVE BEEN IDENTIFIED: 3

<u>LIST OF SWMU(s)</u>	<u>RELEASE TO</u>	<u>NOTED DOCUMENTATION OF RELEASE</u>
1) Storage Tank - Concrete Box (01)	Soil/GW	This below grade, open topped reinforced concrete tank holds filter cake and Class II waste with small amounts of Appendix VIII constituents - phenol, MEK, toluene, plus barium and chromium compounds. Soil samples, taken preparatory to closure, had significant concentrations of barium, chromium, and TOC.

<u>LIST OF SWMU(s)</u>	<u>RELEASE TO</u>	<u>NOTED DOCUMENTATION OF RELEASE</u>
2) Lift Station No. 2 (46)	Soil/GW	Process wastewaters with phenol, MEK, toluene, and barium and chromium compounds are passed through this fiberglass tank. A massive failure took place contaminating the soil and groundwater.
3) Aeration Lagoon (54)	Soil/GW	A surface impoundment holding 4.8 million gallons is part of the wastewater treatment system and holds the same waste as described in #2 above. A groundwater sample taken from a well downgradient of the lagoon indicated low concentrations of some Appendix VIII constituents.

2. NUMBER OF SWMU(s) AT WHICH A RELEASE IS HIGHLY POSSIBLE: 2

<u>LIST OF SWMU(s)</u>	<u>MEDIA</u>	<u>RATIONALE</u>
1) Surface Impoundment (60)	Soil/GW	As part of the facility's original wastewater treatment system, being exposed to the same wastes as #2 above and has been inactive since 1970. A release is likely to have occurred.
2) Waste Piles (61)	Soil/GW	Inactive since 1965, a release is highly possible from the phenol, MEK, toluene, maleic anhydride, barium compounds, and carbon disulfide discarded in this unit.

3. NUMBER OF SWMU(s) WHERE A DETERMINATION OF RELEASE CAN NOT BE MADE DUE TO LACK OF INFORMATION: 8

<u>LIST OF SWMU(s)</u>	<u>RATIONALE</u>
1) Storage Tank-Lab-B (38)	Class IH lab waste and misc. organic liquids were placed in this below ground, steel tank. Subsurface conditions should be investigated.
2-8) Wastewater Treatment System (49,50,51,52,53,55,56)	Seven below-grade tanks comprise the wastewater treatment system which process wastewater with phenol, MEK, toluene, plus barium and chromium compounds. Neutralization, flocculation, and clarification are involved. Nothing is known about the integrity of the system. Releases may have taken place.

- D. NUMBER OF SWMU(s) WITH NO INDICATED RELEASES: 55
(Documentation is necessary for a SWMU to be included in this category.)

<u>LIST OF SWMU(s)</u>	<u>RATIONALE</u>
1) Bulk Storage Area (02)	Class II plant and miscellaneous wastes are stored in 5-40 cu.yd. steel bins before offsite disposal. No past releases.
2) Storage Tank C-61 (03)	Class II clarifier sludge with trace organics are stored. No past releases from above ground tank.
3) Storage Tank WO-1 (05)	An above-grade fiberglass tank holds Class I waste-organic liquid and water with phenol. No releases reported or evident.
4) Storage Tank WO-5 (06)	Class I waste-organic liquid and water with phenol-is placed in this above grade, stainless steel tank with a fiberglass top. Past releases are not indicated.
5) Storage Tank WO-6 (07)	A RCRA-regulated, above-grade, carbon steel, closed tank holds Class I waste-organic liquid and water with phenol, also spent equipment wash and lab waste. No releases are reported.
6-10) Storage Tanks T-19P, T-19W, T-19X, T19-Y, T-20X (08-12)	Class I waste-organic liquids and water with phenol-are placed in these 5 above-grade, steel tanks that hold 52,500 gallons, combined. No releases have been documented.
11) Storage Tank T-23X (13)	An above ground, carbon steel tank sits on a concrete base and holds Class IH waste-sodium aluminate. Releases have not been indicated.
12-13) Storage Tank CA-1, J-42 (14-15)	Class IH waste-scrubber water and sodium sulfate solution-are stored in the two RCRA regulated, above-grade tanks. Tanks are made of fiberglass reinforced with plastic, sit on a concrete pad, and have containment walls. A pump associated with CA-1 leaked wastewater into the containment area, but no release occurred. No other spills have been reported.

LIST OF SWMU(s)RATIONALE

- 14) Storage Tank H-6
(16)

A one-time spill of organic liquids and water with phenol was reported; however, release was contained on tank's concrete base within containment walls. Spill was cleaned up. No other releases reported.

- 15) Storage Tank-Shell
(17)

Unit is a horizontal, carbon steel tank car shell holding up to 5,500 gallons of process wastewater and organic liquid. Undergoing closure; no releases reported.

- 16) Storage Tank B-32
(18)

An above-grade, carbon steel tank with a 15,100 gallon capacity holds Class IH waste - nonhalogenated solvents, organic lab waste, used oil and the Appendix VIII constituents of phenol, MEK, and toluene. No releases have been reported and none were evident during the VSI.

- 17) Bulk Storage Area
(19)

Class II waste, biological sludge and domestic sewer sludge with traces of barium and chromium, are stored in 3 30-cubic yard steel bins. There have been no past releases.

- 18) Drum Storage Area
(20)

A RCRA-regulated drum storage area is used for Class IH waste - carbon disulfide, N-butyl alcohol, isobutyl alcohol, methanol, phenol, xylene, and contaminated soil. Drums are placed on pallets over a concrete base for temporary storage before offsite disposal. Releases have not been documented.

- 19) Container Storage
(21)

Seven roll-off boxes are used for temporary storage of Class IH waste, mostly filter media, biological sludge, domestic sewer sludge and sulfur waste. Some Appendix VIII constituents are included. Past releases have not been noted.

LIST OF SWMU(s)RATIONALE

20-22) Bulk Storage
(22-24)

Class II waste-filter media with oil, plastic and dirt, biological and sewer sludge, sulfur waste, with small amounts of hazardous constituents, is placed in 30-cubic yard steel bins set on a well drained, concrete slab. No indications of past releases. There are 2,2, and 3 bins, respectively.

23-25) Storage Tank, RA3,
W0-4, H-73
(25-27)

Organic liquid and water with phenol are stored in these three, carbon steel tanks set on concrete pads. No releases are documented.

26) Storage Tank W0-2
(28)

A fiberglass, above-grade tank holds Class I waste-organic liquid and water. There have been no past releases.

27) Storage Tank RA-10
(29)

Clarifier sludge with organics are placed in this 1,000 gallon above-grade tank. No past releases are known.

28-31) Storage Tanks W0-8,
W-9, W-10, BB-3
(30,32-34)

Carbon steel above ground tanks on concrete slabs hold 5,774 gallons of organic liquid waste and water. Records indicate no history of releases.

32-33) Storage Tank F0-21,
P-25 (31,36)

During VSI spills were noted on tank and surrounding concrete slab; however, they were contained by curbing so releases to soil and groundwater were blocked. This is a carbon steel tank holding water and organic liquid. Spilled material will be cleaned up. No other releases reported. No further action required.

34) Storage Tank T/C-1
(35)

Unit is a tank car shell located above a concrete slab that holds Class I waste. Past releases are not indicated.

35) Storage Tank Lab A
(37)

Class IH miscellaneous lab waste is temporarily stored in this small above-grade tank. No releases have occurred.

LIST OF SWMU(s)RATIONALE

- | | |
|--|---|
| 36) Asbestos Storage Bins
(39) | Asbestos insulation is placed in this enclosed, 93-cubic yard, steel container before disposal. No releases have been reported. |
| 37) Storage Tank 156 W/O
(40) | No releases are indicated from this small above-grade tank that holds liquid organics and water. |
| 38) Drum Storage Area
(41) | Spent catalyst resins are placed in storage drums. The unit is well maintained with no releases evident. |
| 39) Storage Tank J-52
(44) | Lean Oleum (spent sulfuric acid) is put into this insulated, above-grade, carbon steel tank. There is a concrete slab and curbing for secondary containment. No reports of releases. |
| 40) New Lift Station No. 1
(45) | The unit is a below-grade, open-top, concrete vault which is the containment structure for two separators (SWMU 47,48). Process wastewater with detectable concentrations of phenol, MEK, toluene, and compounds of barium or chromium runs through the unit. No releases have taken place. |
| 41-42) API Separators T-1A, T-1B
(47-48) | Process wastewaters as above go into these fiberglass, below-grade tanks for processing. There have been no releases. |
| 43-45) Stormwater Surge Tanks
E-1, E-2, E-4
(57-59) | These 3 tanks have a capacity of over 330,000 gallons for storm water and some process wastewater with low concentrations of barium and/or chromium compounds, toluene, and phenol. The tanks are above-grade, carbon steel, and sit on concrete slabs. No releases have been noted. |
| 46-51) Alcohol Tanks C-5, C-6,
C-22, C-26, L-6, K-1
(62-65, 70-71) | Wet, mixed alcohol is temporarily stored in these small, above-grade, steel tanks set on concrete slabs with 3-foot containment walls. No spills noted during the VSI nor reported historically. |

LIST OF SWMU(s)RATIONALE

52-55) Alcohol Tanks M-26, M-28,
M-29, M-31
(66-69)

Large, steel, above-grade tanks hold heavy wet alcohol. Tanks sit on concrete pads and are curbed. No releases have taken place.

E. SUPPLEMENTAL INFORMATION ON RCRA REGULATED UNITS: 3
(Describe any problems identified or suspected from regulated units including identified releases to groundwater)

LIST OF SWMU(s)CONCERNS

1) Storage Tank W0-1
(04)

Class IH waste-organic liquid and water with phenol-is stored in this above-grade, carbon steel tank. During the VSI, staining was seen on the gravel surrounding the tank. After removing the contaminated soil, the tank should be tested to determine if the spill is due to a leaking tank or careless loading and unloading practices.

2) Old Lift Station No. 1
(42)

Process wastewater with low concentrations of phenol, MEK, toluene, and barium or chromium compounds was handled. Unit is undergoing groundwater assessment and closure in accordance with a TWC compliance plan.

3) Equalization Lagoon
(43)

A RCRA-regulated, inactive surface impoundment was part of the original wastewater treatment system but is to be closed. Sampling from down-gradient wells indicate levels of TOC, TOH, and phenols above background. A groundwater assessment plan has been submitted.

II. FINDINGS

A. RECOMMENDATIONS: (EPA, STATE and/or CONTRACTOR)

State

Recommend RFIs on 13 units - Storage Tank (01), Storage Tank Lab-B (38), List Station #2 (46), Wastewater Treatment System (49-56), Inactive Surface Impoundment (60), and Inactive Waste Piles (61).

EPA

We concur with the recommendations made by the State of Texas.

B. ADDITIONAL COMMENTS:

1. The integrity of Storage Tank WO-1 should be tested to determine the nature of a spill seen during the VSI.
2. Old Lift Station No. 1 (42) and Equalization Lagoon (43) have submitted closure plans and are undergoing groundwater assessments to conform to a TWC Compliance Plan.

CONCUR:


Lydia M. Borda-Clista

DATE:

5-12-88

~~W.R.N.~~ HARRY
~~W.D.~~ HARTMANN
~~W.D.~~ HIBBS

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : The Files

THRU :

DATE:

Technical

FROM : Wayne R. Harry, H&SW Permits Section

SUBJECT: The Lubrizol Corporation - Deer Park Facility
Solid Waste Registration No. 30324 - Preliminary Assessment

REVISED

Attached is the revised PA for The Lubrizol Corporation. The PA was revised in response to EPA comments dated May 7, 1986 (letter attached). The revisions to this document consist of additional or revised information for TWC Notice of Registration Facility Nos. 2, 3, 5, 13-15, 17, 21-24, 26, and 27 and the addition of Nos. 28-41.

The Lubrizol Corporation operates an interim status hazardous waste management facility associated with their chemical production plant in Deer Park, Texas. The hazardous waste management units consist of twenty tanks, one container storage area, and two surface impoundments.

Operation of the two surface impoundments has resulted in discharge of low concentrations of several Appendix VIII materials to shallow area ground water. Lubrizol has submitted a Ground-Water Quality Assessment Plan for the two impoundments to the Texas Water Commission (TWC). Lubrizol has also submitted a Ground-water Compliance Plan pursuant to the Agreed Final Judgement between the State of Texas vs. The Lubrizol Corporation, Cause No. 85-57130. The closure plans for the impoundments have been approved by the TWC.

A Visual Site Inspection (VSI) was conducted on June 23, 1986 at the facility to provide additional information concerning the waste management units. A Remedial Investigation (RI) is recommended for the following facility units for which a release of hazardous waste or hazardous constituents has been documented, for which there is a high potential of a release, or for which insufficient information is available to make such determinations:

<u>N.O.R.</u>	<u>Waste Management Unit</u>	<u>Status</u>
01	Concrete Storage Tank (below-grade)	Inactive
04	Tank WO-1	Active
38	Tank LAB-B (below-grade)	Active
	Lift Station No. 2	Active
	Surface Impoundment (Aeration Lagoon)	Active
	Surface Impoundment	Inactive
	Waste Piles	Inactive
	Tank T3X (below-grade)	Active
	Tank T4X (below-grade)	Active
	Tank T5A (below-grade)	Active

<u>N.O.R.</u>	<u>Waste Management Unit</u>	<u>Status</u>
	Tank T5B (below-grade)	Active
	Tank T7A (below-grade)	Active
	Tank T7B (below-grade)	Active,
	Tank T-22X (below-grade)	Active

George P. Hartmann, P.E. for
Wayne R. Harry

WRH:bb
Attachments



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

REGION VI

1201 ELM STREET
DALLAS, TEXAS 75270

MAY 7 1986

Ms. Ann N. McGinley
Director of Special Programs
Hazardous and Solid Waste Division
Texas Water Commission
P.O. Box 13087, Capitol Station
Austin, Texas 78711

Re: RCRA Preliminary Assessment
Lubrizol Company
TXD041067638

Dear Ms. McGinley:

We have completed the review of the RCRA Preliminary Assessment (PA) for Lubrizol Company, and agree with your recommendation for a Site Investigation (SI). However, in order to complete the SI, you also need to include Tank T-23X.

In order to recommend no further action on Tank WO-1, Tank CA-1, Tank J-42, and Tank J-52 through Tank K-1, documentation is needed.

Thank you for your cooperation. If you have any further questions, please contact me or Erlece Allen of my staff at (214) 767-0497.

Sincerely,

A handwritten signature in dark ink, appearing to read "Sam Becker".

Sam Becker, P.E.

Chief
Hazardous Waste Compliance Branch

JUN 10 1988

MEMORANDUM

SUBJECT: Transmittal of RCRA Facility Assessment Evaluation

FROM: Bill Luthans, Acting Chief
Technical Section (6H-CT)TO: William K. Honker, Chief
Permits Section (6H-CP)

Attached is a copy of the RCRA Facility Assessment Evaluation on:

° FACILITY NAME: Lubrizol Corporation° EPA I.D. NUMBER: TXD041067638

Please advise us if more information is required and/or if you need further assistance.

Attachment

cc: Sam Becker (6H-C)

bcc: B. Gorrod (6H-CT)
B. Videan (6H-CT)
B. Taylor (6H-H0)
G. Reiter (6H-H0)
M. McKee (6H-ES)

CONCURRENCES

SYMBOL	6H-CT:BGORROD:gina:x6790:5/29/88 (Revised by Gina:6/8/88)	File Code: L031	Disk: 2	Line: 18
SURNAME	6H-CT: BOADA	6H-CT: LUTHANS		
DATE				

File 111-A

TWC Reg. No. 30324

TEXAS WATER COMMISSION
Solid Waste Compliance Monitoring Inspection Report

INSPECTION COVER SHEET

C.O. Use Only

TWC District 07 Deer Park

JUN 16 1987

0687 RC

EPA ID No. TXDC41067638

COMMERCIAL WASTE FACILITY

GOVT. FACILITY

NAME OF COMPANY Logan Corp. Deer Park Plant

MAILING ADDRESS P.O. Box 158 DEER PARK, TEXAS 77536

Tel. 713/479-2851

SITE LOCATION Tickel Rd. DEER PARK, TEXAS 77536

Tel. same as above

COUNTY HARRIS

TYPE OF INDUSTRY Manufactures lube oil additives.

GENERATOR CLASSIFICATION: Industrial ☒ Municipal

Part A Permit Application submitted to the State? Yes ☒ No ☐ To EPA? Yes ☒ No ☐
Affidavit of Exclusion submitted to TWC? Yes ☐ No ☒
Was a written exclusion granted by TWC? N/A ☒ Yes ☐ No ☐ ...If yes, Date: _____
Will this facility require a RCRA permit? Yes ☒ No ☐

CURRENT WASTE MANAGEMENT (Haz.-"H"; Class I NonHaz.-"NH"; Class II-"II"; Class III-"III")

Generator H, NH, II Treatment _____ Storage H, NH, II Disposal _____ Transporter _____

HW EXEMPTIONS: 90-Day Accumulation: ☒ Other: several tanks operated as 90 day storage.

SQG _____: Total HW Generation Per Month: <100 kg. _____ 100-1000 kg. _____

H W Facilities (circle facility codes): (C)(T) SI WP LT LF I TT TR WDW O

N H Facilities (circle facility codes): (C)(T) SI WP LT LF I TT TR WDW O

Anomalies in the above information will be addressed by: (a) Enforcement in progress _____,
(b) Owner/Operator _____, (c) District Office _____, (d) Central Office _____.

Type of Inspection (circle): (CEI) SQG CL CD SA OT FO SP

Inspector's Name and Title Sandra A. Parker, Haz. ; S.W. Spec.

Inspection Participants Julius Rexer

Date(s) of Inspection MAY 14 & 19, 1987

Signed: Sandra A. Parker 6-8-87
Inspector Date

Approved: Sandra A. Parker for
District Manager TOM KEACH Page 1 of 1

RECEIVED
JUN 11 1987
FIELD OPERATIONS
04/87

NOTE: If a required Checklist is omitted, explain:

GENERATORS CHECKLIST**Section A - HW DETERMINATION and NOTIFICATION (TAC 335.62,.63,.6)**

1. Has generator completed an appropriate **hazardous waste determination** for each solid waste produced? YES ☒ NO ☐
2. Check the method used for determination:
- ☐ a. Listed as a hazardous waste in 40CFR Part 261, Subpart D.
 - ☐ b. Process or materials knowledge.
 - ☒ c. Tested for characteristics as identified in Part 261, Subpart C
(If equivalent test method is used, attach a copy) *See comments: NOV letter.*

NOTE: If a hazardous determination has not been made or appears to be incorrect, the inspector should obtain a sample of the waste for analysis and explain in comments.

3. Has the facility received an EPA ID number? N/A ☐ YES ☒ NO ☐
4. Is notification of all waste streams generated correct? *See comments.* YES ☐ NO ☒
5. Is notification of all waste management (TSD) methods correct? YES ☒ NO ☐

6. Does facility generate, treat, store, or dispose of **PCB wastes**? YES ☒ NO ☐
If yes, describe storage and disposition:

All capacitors have been disposed of at Rollins.
Some transformers are still in service.

7. Does this facility generate **used oils**? YES ☒ NO ☐
If yes, describe storage and disposition:

Stored in tank prior to off-site disposal or sale to recycler.

8. Does this facility generate **spent solvents**? YES ☒ NO ☐
If yes, describe storage and disposition:

Disposed of off-site or sold to recycler.

9. Does this facility utilize **sumps** in the management of hazardous waste? YES ☒ NO ☐
If yes, describe use:

Sumps are used to collect organic drainings from tanks which are removed by vacuum trucks and disposed of off-site or placed in tanks on site.

*** An entry in this column indicates explanation/response is needed

Section B - UNAUTHORIZED DISCHARGES (335.4 & Chapter 26)

1. Is there evidence of spills, unauthorized discharges or threats of such discharges?

(a) If Yes, have they been reported and remedied?

*See
Comments*

YES ___ NO ☒ ***

N/A ☒ YES ___ NO ___

Section C - INTERNATIONAL SHIPMENTS (335.75)

1. If generator **exported** or **imported** hazardous wastes, was the appropriate notification made to the EPA?
2. Was the waste manifested and signed by the foreign consignee?
3. Has confirmation of waste transportation out of the country been received by the generator?

N/A ☒ YES ___ NO ___

N/A ☒ YES ___ NO ___

N/A ☒ YES ___ NO ___

Section D - RECORDKEEPING and REPORTING (335.9,.13,.329,.70-71)

1. Does generator maintain the following records and reports, if applicable, for **three years**?

- a. Waste Manifests.
- b. Monthly off-site shipment Summaries.
- c. Monthly on-site Land Disposal Summaries.
- d. Monthly waste receipt Summaries.
- e. Company Records of ind. solid waste T/S/D activities.
- f. Company Records of municipal hazardous waste T/S/D activities for generators of >100 kg/month.
- g. Analytical results of haz. waste determinations.
- h. Annual Reports (sbmtd by Jan 21)

N/A ___ YES ☒ NO ___

N/A ___ YES ☒ NO ___

N/A ☒ YES ___ NO ___

N/A ___ YES ☒ NO ___

N/A ___ YES ☒ NO ___

N/A ☒ YES ___ NO ___

N/A ___ YES ☒ NO ___

N/A ___ YES ☒ NO ___

2. Has generator submitted **exception reports** to TWC for any original (white) copies of manifests not received back?

N/A ☒ YES ___ NO ___

+++ IF GENERATOR DISPOSES OF WASTES ON-SITE ONLY, WRITE N/A IN SECTIONS E & F +++

Section E - MANIFEST REQUIREMENTS (335.10)

1. Does generator use Waste Manifests when shipping Hazardous and Class I Nonhazardous wastes offsite?

N/A ___ YES ☒ NO ___

2. Are Waste Manifests properly completed and signed?

N/A ___ YES ☒ NO ___

3. Are off-site disposal facilities RCRA-permitted or operating under RCRA interim-status standards?

N/A ___ YES ☒ NO ___

4. Identify primary off-site disposal facilities:

Hanesbrough Energy Systems Crowley La. (HESCO) Rollins, BFT

NOTE: If the SQG exclusion applies, check for compliance with appropriate SQG rules.

++++ STOP & SIGN HERE IF FACILITY QUALIFIES AS A SMALL QUANTITY GENERATOR +++++

Signed: _____

Section F - PRETRANSPORT REQUIREMENTS (335.65-68)

1. Are hazardous wastes **packaged** in accordance with DOT requirements (49CFR Parts 173,178,179) before being offered for transport? (if observed) *not observed* N/A ☒ YES ___ NO ___ ***
2. Are hazardous waste packages **labeled** and **marked** in accordance with 49CFR Part 172 before being offered for transport? (if observed) *not* N/A ☒ YES ___ NO ___
3. Is each container of 110 gallons or less marked with the following hazardous waste **warning label** before being offered for transport? (if observed) *not* N/A ☒ YES ___ NO ___
- "HAZARDOUS WASTE--Federal Law Prohibits Improper Disposal.
If found, contact the nearest police or public safety authority or the U.S. Environmental Protection Agency.
Generator's Name and Address _____
Manifest Document No. _____"
4. Are vehicles transporting hazardous wastes **placarded** in accordance with DOT regulations (49CFR Part 172 Subpart F)? (if observed) *not* N/A ☒ YES ___ NO ___

Section G - ACCUMULATION TIME EXEMPTION (335.69)

NOTE: A facility may accumulate hazardous wastes in containers or tanks for up to 90 days without a permit.

1. Is the beginning **date** of Accumulation Time clearly indicated on each container? *See comments* N/A ___ YES ☒ NO ___
2. Is each container or tank clearly labeled or marked "Hazardous Waste"? N/A ___ YES ☒ NO ___
3. Did the facility exceed the 90-day storage limitation? N/A ___ NO ☒ YES ___

NOTE: Attach a Container Checklist for each container storage area.

NOTE: Attach a Tanks Checklist for each tank (or each group of similar tanks).

NOTE: If this is a Treatment, Storage or Disposal (TSD) Facility, proceed to General Facilities Checklist.

COMMENTS SHEET

Section A 11 HW determination - Several waste filter cake streams need to be tested for Hazardous characteristics mainly EPTox. Facility 34 (Tank BB-3) and Facility 35 (Tank car) which store organic liquids; water needs to have the waste stream analyzed for EPToxicity. Several filter cake streams have tested out high for Barium and one is slightly higher in Arsenic. Lubrizol intends to change their waste analysis plan to test these streams as they

Section 1 are generated and prior to shipment

A-4 Paint wastes; solvents and thinners and sand blasting need to be added on Notice of Registration (See deficiency letter). See G 1 1/2 below.

Section B 11 ^(5/3/87) Lubrizol recently had a spill of lube oil / lube oil additives (500 gallons) ^{through} into 005 outfall in to Patrick's Bayou. This area was checked during this inspection and all of the oil had been cleaned up.

Section G 1 1/2 Several drums containing paint waste were noted near facility 39 (asbestos bin). Some were uncovered, not labeled or dated and spills were noted on the ground in this area. In addition 2 small horizontal portable-type tanks were noted in this area. They are used to store fiberglass resins. The entire tank is sent to Texas Ecologists in Robstown. One of the tops of the tank was not covered. * The drum storage area & the tanks should be added to the NOR.

GENERAL FACILITIES CHECKLISTSection A - GENERAL SITE INFORMATION

1. Are any solid waste facilities located in the 100-year floodplain? NO ☒ YES ☐ ***
2. Describe land use within one mile industrial
3. Are there any **closed** or **abandoned** solid waste facilities? *See comments* NO ☐ YES ☒
4. Has proof of **deed recordation** of all solid waste Land Disposal facilities been provided to TWC? *not applicable unless Austin requires Equalization Basin to be deed-recorded.* N/A ☒ YES ☐ NO ☐
5. Is there any evidence of **fires** and **explosions** or **leaks** and **discharges** to the environment from solid waste facilities or any other type of facility? *See comments* NO ☐ YES ☒

NOTE: Attach Plant Map showing site orientation, waste management facilities, and major topographic features.

+++ STOP & SIGN HERE IF THE REST OF THIS CHECKLIST IS NOT APPLICABLE +++

Signed: _____

Section B - PERSONNEL TRAINING

1. Does the owner/operator maintain a personnel training program? N/A ☐ YES ☒ NO ☐
2. Is the program directed by a person trained in hazardous waste management procedures? N/A ☐ YES ☒ NO ☐
3. Is the program designed to prepare employees to respond effectively to hazardous waste emergencies? N/A ☐ YES ☐ NO ☒
4. Is a training review given annually? *See comments for 3, 4, 5.* N/A ☐ YES ☐ NO ☒
5. Does the owner/operator keep the following records at the facility:
- a. Job title and written job description of each position? N/A ☐ YES ☐ NO ☒
- b. Description of the type and amount of training? N/A ☐ YES ☐ NO ☒

*** An entry in this column indicates explanation/response is needed.

Section C - PREPAREDNESS and PREVENTION

1. Is the facility equipped with: ***
- a. Internal communication or alarm system within easy access YES ☒ NO ☐
 - b. Communication system to call off-site emergency assistance YES ☒ NO ☐
 - c. Fire, spill control, and decontamination equipment YES ☒ NO ☐
 - d. Adequate fire-water supply (volume and pressure) YES ☒ NO ☐
2. Is the above-noted emergency equipment **regularly tested**? YES ☒ NO ☐
3. Is **aisle space** sufficient to allow unobstructed movement of personnel and equipment? YES ☒ NO ☐
4. Has the owner/operator attempted to familiarize local response authorities with: facility layout, entrances and evacuation routes, hazardous waste properties and hazards, and the work location of facility personnel? N/A ☐ YES ☒ NO ☐
5. Has a **primary authority** been designated in case more than one law enforcement or fire department responds? *Liberty's fire dept.* N/A ☐ YES ☒ NO ☐
6. Has the owner/operator attempted to reach agreements with: State emergency response teams, emergency response contractors, and equipment suppliers? N/A ☐ YES ☒ NO ☐
7. Has the owner/operator attempted to make arrangements with **local hospitals** to familiarize them with the hazardous wastes handled and the injuries that could result from: fires, explosions, or releases from the facility? N/A ☐ YES ☒ NO ☐
8. If State or local authorities declined to enter into the above-noted agreements, was this documented? N/A ☐ YES ☒ NO ☐

Section D - CONTINGENCY PLAN and EMERGENCY PROCEDURES

1. Is a **contingency plan** to minimize dangers of accidental releases from hazardous waste facilities maintained at the facility? YES ☒ NO ☐
2. Does the contingency plan contain:
- a. Actions to be taken in response to emergencies YES ☒ NO ☐
 - b. Description of agreements with police, fire & hospital officials N/A ☐ YES ☒ NO ☐
 - c. Names, addresses & phone numbers of emergency coordinators YES ☒ NO ☐
 - d. List, description & location of emergency equipment YES ☒ NO ☐
 - e. Evacuation plans, if necessary N/A ☐ YES ☒ NO ☐
3. Have **copies** of the contingency plan been provided to: local police and fire departments, hospitals, and State and local emergency response teams? N/A ☐ YES ☒ NO ☐

+++ STOP & SIGN HERE IF FACILITY QUALIFIES FOR THE 90-DAY STORAGE EXEMPTION +++

Signed: _____

Section E - WASTE ANALYSIS

1. Is a **written waste analysis plan** maintained at the facility? YES ☒ NO ☐
2. Does the plan include the following:
- a. Detailed physical and chemical analysis of all haz. wastes YES ☒ NO ☐
 - b. Rationale for selection of analytical parameters YES ☒ NO ☐
 - c. Analytical test methods used YES ☒ NO ☐
 - d. Sampling methods used to obtain representative waste samples YES ☒ NO ☐
 - e. Frequency the initial analysis will be reviewed or repeated (including re-testing when waste streams change) YES ☒ NO ☐
 - f. Waste analyses that generators have agreed to provide (applies to facilities receiving wastes from off-site) N/A ☒ YES ☐ NO ☐
3. For facilities receiving wastes from off-site:
- Is each incoming waste shipment **inspected and**, if necessary, **analyzed** to check it against the manifest? N/A ☒ YES ☐ NO ☐

Section F - SECURITY

1. Does the facility provide adequate security to minimize the possibility of unauthorized entry by persons or livestock? YES ☒ NO ☐
2. Is security of the active portion of the facility provided through:
(circle)
- a. 24 Hr surveillance
 - or
 - b. Perimeter barriers and means to control entry
- YES ☒ NO ☐
3. Is a **sign** with the legend "Danger-Unauthorized Personnel Keep Out" (or an equivalent legend) posted at all entrances and approaches to active portions of the facility? YES ☒ NO ☐
4. Is the sign legible from at least 25 feet? YES ☒ NO ☐

NOTE: The sign must also be written in Spanish in counties bordering the Republic of Mexico.

Section G - GENERAL INSPECTION REQUIREMENTS

1. Is a **written inspection schedule** maintained at the facility? N/A ☐ YES ☒ NO ☐
2. Does the schedule provide for inspection of the following:
- | | |
|---------------------------------------|---|
| a. Monitoring equipment | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Safety and emergency equipment | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Security devices | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| d. Operating and structural equipment | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
- See comments*
3. Does the schedule identify the following **types of problems** to be looked for during the inspection:
- | | |
|-------------------------------------|---|
| a. Malfunction and deterioration | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Operator error | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Discharge or threat of discharge | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
4. Does owner/operator maintain **inspection logs** which include:
- | | |
|---|---|
| a. Date and time of inspection | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Name of inspector | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Notation of observation | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| d. Date and nature of repairs and remedial action | YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
5. Have malfunctions or other deficiencies noted in the inspection log been corrected? *If problem does not appear on form in future, it is assumed to be corrected. Work order are written to address problems.* N/A ☐ YES ☒ NO ☐
6. Are inspection log **records** maintained for three years? YES ☒ NO ☐

Section H - SPECIAL REQUIREMENTS

1. Does the owner/operator take precautions to prevent accidental ignition or reaction of **ignitable or reactive** wastes? N/A ☐ YES ☒ NO ☐
2. Are smoking and open flame confined to designated areas? N/A ☐ YES ☒ NO ☐
3. Are "No Smoking" signs posted in areas with ignitable or reactive wastes? *No smoking allowed in process areas.* N/A ☒ YES ☐ NO ☐

Section I - MANIFEST SYSTEM, RECORDKEEPING and REPORTING

1. Does owner/operator comply with manifesting requirements? N/A ☐ YES ☒ NO ☐
2. For wastes received from off-site: *See comments*
- a. Is waste that is transported by rail or water accompanied by properly executed shipping papers? N/A ☒ YES ☐ NO ☐
- b. Have all shipments been consistent with the manifests? N/A ☐ YES ☒ NO ☐
- c. Are unmanifested wastes reported to TWC? N/A ☒ YES ☐ NO ☐
- d. Have manifest discrepancies been reconciled with the generator and transporter? N/A ☒ YES ☐ NO ☐

Section J OPERATING RECORD

1. Is a **written operating record** maintained at the facility? N/A ☐ YES ☒ NO ☐
2. Does the operating record reflects the following:
- a. Description and quantity of each hazardous waste received and the method and date of treatment, storage or disposal at the facility. N/A ☐ YES ☒ NO ☐
- b. Location & quantity of each haz. waste in the facility. N/A ☐ YES ☒ NO ☐
- c. Records and results of waste analyses and trial tests. N/A ☐ YES ☒ NO ☐
- d. Summary reports of all incidents requiring implementation of the Emergency Contingency Plan. N/A ☐ YES ☒ NO ☐
- e. **Closure Cost estimates** for all facilities. N/A ☐ YES ☒ NO ☐
- f. **Post-Closure cost estimates** for all disposal facilities N/A ☐ YES ☒ NO ☐

Section K - FINANCIAL ASSURANCE

1. Did preinspection call to Central Office confirm that the facility has submitted current financial assurance documentation? N/A ☐ YES ☒ NO ☐

2. If Yes, indicate the documents submitted and their respective values:

<input checked="" type="checkbox"/> Sudden Liability-	Amount: \$ <u>1 MILN</u>	per occurrence,	\$ <u>2 MILN</u>	annual
<input checked="" type="checkbox"/> Non-sudden Liability-	Amount: \$ <u>3 MILN</u>	per occurrence,	\$ <u>6 MILN</u>	annual
<input checked="" type="checkbox"/> Closure Assurance-	Amount: \$ <u>263518</u>			
<input type="checkbox"/> Post-Closure Assurance-	Amount: \$ _____			
<input type="checkbox"/> Corrective Action-	Amount: \$ _____			

*will be addressed
in permit if corrective action
is determined to be necessary.*

3. Did Financial Assurance Officer report that documentation is adequate? N/A ☐ YES ☒ NO ☐

COMMENTS SHEET

Section A3 1 Closed facilities ① LAB B Tank - Lubrizol submitted a closure plan and excavated soil surrounding the underground tank. Samples indicate slight contamination exists at the east and west walls. Lubrizol has resubmitted their closure plan along with a new schedule of closure. Austin is currently reviewing this newly submitted plan.

② Equalization basin has been closed and certified. Austin is
 Section 1 evaluating high Ba^{++} levels found in back-ground samples. Austin is also evaluating whether deed record-ation of the basin will be necessary.

③ The #1 Lift Station has been closed and certified.

④ Tank Car (fac. 17) has been closed and certified.

⑤ The filter cake pit (II) has been closed & sample
 Section 1 results were submitted to Austin in 1986; Lubrizol did not receive acknowledgment from TWC.

Lubrizol intends to close: WO-1 Tank, B-32 Tank, No. 2 Lift Station.

Section A5 1 Leaks were noted in the waste paint storage area near facility 39. Sandblasting was also being conducted in the same area & sand was dumped on the ground.

Stains were noted on concrete of No. 2 Lift Station although no direct discharge was noted.

RA-10 Tank was leaking onto concrete curbed area which drains to process sewer.

COMMENTS SHEET

Section B 1,3,4,5 Labrizol has a training program in place however not everyone has received training nor has all training been documented. The training program does not include the new tanks. Job descriptions will be changed.

Section D 1,2C names, addresses and phone numbers of current emergency coordinators needs to be updated.

Section G 1,2,3 Several tanks need to be included on Labrizol's inspection schedule including, but not limited to, WO-1, C-61, H-6, WO-2, P-25 CA-1 was not being inspected daily as required.

In general, inspection logs are confusing and are conducted by several groups within the plant. One group looks at gauges to see if tank is empty, another group looks at the tank itself for corrosion etc. Another inspection is conducted on a weekly basis and yet another form is used.

COMMENTS SHEET

Section F / manifesting: Alcohols are sent to Lubrizol's Deer Park from ^{their} Bayport plant and are re-used (see flow diagram). These materials are manifested. In addition, a Lubrizol facility at Paktank sends waste to the Deer Park plant - this waste is manifested + green copies are kept at Deer Park.

Section /

Section /

Section /

TWC Solid Waste Inspection Report

TWC Reg. No. 30324Reg. Facility No. 14+15Class of Waste (H)TANKS CHECKLISTJ-42 CA-1Use of Tank (check): Treatment ☐ Storage ☒Type of Waste: Scrubber waterType of Tank: Elevated ☐ On-ground ☒ Below-grade ☐ Underground ☐**NOTE:** Underground storage tanks are generally not being granted permit exemptions.Describe Tank construction: Both tanks are constructed of fiber glassSection A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO ☒ YES ☐2. If the Tank is **uncovered**:Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ☒ YES ☐ NO ☐

Describe: _____

3. If the Tank is **continuous-feed**:Is there a feed cutoff **or** bypass to standby Tank? N/A ☒ YES ☐ NO ☐Section B - WASTE ANALYSES1. If the Tank is used to treat or store **significantly different** wastes:*a. Are waste analyses and trial treatment
or storage tests done on these different wastesorIs there written, documented information
on similar treatment or storage of similar wastes?N/A ☒ YES ☐ NO ☐*b. Are records available of these
wastes analyses in the operating record?N/A ☒ YES ☐ NO ☐

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass, and/or drainage system)? N/A YES ✓ NO
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A YES NO ✓ *
- c. Data gathered from monitoring equipment? N/A YES NO ✓ *
- d. Level of waste in each **uncovered** tank? N/A ✓ YES NO

* CA-1 not inspected daily for at least one week.

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? YES ✓ NO
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES ✓ NO

*3. Is a written **inspection schedule** kept at the site?

N/A YES ✓ NO

*4. Are adequate Tank **inspection logs** maintained for the necessary three years?

N/A YES ✓ NO

Section D - SPECIAL REQUIREMENTS

1. If **ignitable** and **reactive** wastes are placed in the Tank:

- a. Are they rendered non-ignitable or non-reactive or Are they protected from sources of ignition or reaction? (N/A if the Tank is used solely for emergencies) N/A ✓ YES NO
- b. Are they compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A ✓ YES NO

2. If the Tank is used to hold **incompatible** wastes:

Is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A ✓ YES NO

Tank Capacity & Dimensions: J-42-10,000 gal; high concrete dike surrounds tank

CA-1-18,000 gal - diked and area contains sump to process sewer.
Comments: CA-1; J-42 will be permitted tanks. Waste is pumped from the tank to an oxidation tower, then to the bio-ponds for treatment.

TWC Solid Waste Inspection Report

CONTAINER STORAGE AREA CHECKLIST

roll-off bins

TWC Reg. No. 30324

Reg. Facility No. 22,23

Class of Wastes (H, NV)

- | | | | |
|---|---|------------------------------|-----------------------------|
| 1. Are containers in good condition? | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> | *** |
| 2. Are the containers compatible with the wastes being stored? | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> | |
| 3. Are containers kept closed and stored in a safe manner? | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> | |
| 4. Are containers inspected <u>weekly</u> for leakage and deterioration? | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> | |
| 5. Are containers holding ignitable or reactive wastes kept at least 15 meters (50 ft) from the facility's property line? | N/A <input checked="" type="checkbox"/> | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 6. Are containers holding incompatible wastes separated by a physical barrier or sufficient distance? | N/A <input checked="" type="checkbox"/> | YES <input type="checkbox"/> | NO <input type="checkbox"/> |
| 7. Does the storage area have containment protection? | YES <input checked="" type="checkbox"/> | NO <input type="checkbox"/> | |

8. Describe the Container Storage Area using comments and/or photos:

Roll containers are stored on concrete areas
with drains to WWTs. Storage for filter cake.

*** An entry in this column indicates explanation/response is needed.

TWC Solid Waste Inspection Report

TWC Reg. No. 30324Reg. Facility No. 18,37TANKS CHECKLISTClass of Waste (H)Use of Tank (check): Treatment ☐ Storage ☒B-32 + Lab Tank - AType of Waste: Solvents, lab wastesType of Tank: Elevated ☐ On-ground ☒ Below-grade ☐ Underground ☐**NOTE:** Underground storage tanks are generally not being granted permit exemptions.Describe Tank construction: carbon steelSection A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure?NO ☐ YES ☒ ~~*~~See comments2. If the Tank is **uncovered**:Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure?N/A ☒ YES ☐ NO ☐

Describe: _____

3. If the Tank is **continuous-feed**:Is there a feed cutoff **or** bypass to standby Tank?N/A ☒ YES ☐ NO ☐B-32 is no longer in service
however W-6 was standby tankSection B - WASTE ANALYSES1. If the Tank is used to treat or store **significantly different** wastes:*a. Are waste analyses and trial treatment
or storage tests done on these different wastesorIs there written, documented information
on similar treatment or storage of similar wastes?N/A ☒ YES ☐ NO ☐*b. Are records available of these
wastes analyses in the operating record?N/A ☒ YES ☐ NO ☐

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items (if present) inspected at least daily: *B-32 out of service*
- a. Discharge control equipment (e.g. waste feed cut-off, bypass, and/or drainage system)? *N/A* ☒ YES ☐ NO ☐
 - b. Monitoring equipment (pressure & temperature gauges, etc.)? *N/A* ☒ YES ☐ NO ☐
 - c. Data gathered from monitoring equipment? *N/A* ☒ YES ☐ NO ☐
 - d. Level of waste in each **uncovered** tank? *N/A* ☒ YES ☐ NO ☐
2. Are the following items inspected at least weekly:
- a. Construction materials of tank for corrosion and leaks? *Lab A* YES ☒ NO ☐
 - b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? *Tank is inspected by lab personnel* YES ☒ NO ☐
- *3. Is a written **inspection schedule** kept at the site? *N/A* YES ☒ NO ☐
- *4. Are adequate Tank **inspection logs** maintained for the necessary three years? *N/A* YES ☒ NO ☐

Section D - SPECIAL REQUIREMENTS

1. If **ignitable** and **reactive** wastes are placed in the Tank:
- a. Are they rendered non-ignitable or non-reactive or Are they protected from sources of ignition or reaction? *N/A* YES ☒ NO ☐
(N/A if the Tank is used solely for emergencies) *protected from ignition sources.*
 - b. Are they compliant with the National Fire Protection Association buffer zone requirements for covered tanks? *N/A* YES ☒ NO ☐
2. If the Tank is used to hold **incompatible** wastes:
- Is the Tank washed prior to placement of wastes incompatible with previously stored wastes? *N/A* ☒ YES ☐ NO ☐

Tank Capacity & Dimensions: *(SP) B-32 - 18,000 gal. * Corrosion was noted on tank, however, this tank has been taken out of service & hybridized plans to close it. would be permitted first though.*

Comments: *The tank is on a concrete pad; no dikes*

Lab Tank-A - 345 gal. On concrete pad w/ curbing; ramps. Spills would drain to process sewer.

TWC Solid Waste Inspection Report

TWC Reg. No. 30324

Reg. Facility No. See below

TANKS CHECKLIST

C-61^(FAC 03), WO-1^(FAC 04), WO-3^(FAC 05), WO-5^(FAC 06), WO-6^(FAC 07), T-19P^(FAC 08-empty), T-19-W^(FAC 09), T-19Y^(FAC 11), H-6^(FAC 16), RA-3^(FAC 25)
 Use of Tank (check): Treatment _____ Storage ☒
 Class of Waste (H)
 WO-2^(FAC 28), P-25^(FAC 36)

Type of Waste: Organic liquid: water

Type of Tank: Elevated _____ On-ground ☒ Below-grade _____ Underground _____
most except where noted in "Comments"

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: MOST ARE CARBON STEEL, SOME ARE FIBERGLASS;

Section A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO ☒ YES _____

2. If the Tank is **uncovered**:

Is there 2 ft. of freeboard, an adequate containment dike, a drainage control system, or a diversion structure? N/A ☒ YES _____ NO _____

Describe: _____

3. If the Tank is **continuous-feed**:

Is there a feed cutoff or bypass to standby Tank? N/A ☒ YES _____ NO _____

Section B - WASTE ANALYSES

1. If the Tank is used to treat or store **significantly different** wastes:

*a. Are waste analyses and trial treatment or storage tests done on these different wastes

or
 Is there written, documented information on similar treatment or storage of similar wastes?

N/A ☒ YES _____ NO _____

*b. Are records available of these wastes analyses in the operating record?

N/A ☒ YES _____ NO _____

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass, and/or drainage system)? N/A ☐ YES ☒ NO ☐
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A ☐ YES ☒ NO ☐
- c. Data gathered from monitoring equipment? N/A ☐ YES ☒ NO ☐
- d. Level of waste in each **uncovered** tank? N/A ☐ YES ☒ NO ☐

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? YES ☒ NO ☐
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES ☒ NO ☐

*3. Is a written **inspection schedule** kept at the site? N/A ☐ YES ☒ NO ☐

*4. Are adequate Tank **inspection logs** maintained for the necessary three years? N/A ☐ YES ☒ NO ☐

Section D - SPECIAL REQUIREMENTS

1. If **ignitable** and **reactive** wastes are placed in the Tank:

- a. Are they rendered non-ignitable or non-reactive or Are they protected from sources of ignition or reaction? (N/A if the Tank is used solely for emergencies) N/A ☐ YES ☒ NO ☐
- b. Are they compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A ☐ YES ☒ NO ☐

2. If the Tank is used to hold **incompatible** wastes:

Is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A ☒ YES ☐ NO ☐

Tank Capacity & Dimensions: See Part B application and attached registration

Comments: _____

COMMENTS SHEET

Section /

TANK WLO-1 - newly painted carbon steel. overflow available to process sewer (in ground concrete sump. Soil surrounding tank has been removed and new gravel applied. * currently empty, previously held high Ba containing waste list. * To be added to inspection list.

P-25 - on ground surrounded by curbed concrete area. * To be added to inspection list.

WLO-2 - ABOVE-GRADE, FIBERGLASS TANK, ON CONCRETE WITH CURBING : DRAINS TO PROCESS SEWER.

Section /

Section /

Section /

TWC Solid Waste Inspection Report

TWC Reg. No. 30324

Reg. Facility No. See below

TANKS CHECKLIST

~~PERM~~ H-73^(PAC)(27) RA10^(PAC)(29) WO-8^(PAC)(30) FO-21(31) WO-10(33) WO-9(32) Class of Waste (NH)
BB-3(34) TK-1(35)
Use of Tank (check): Treatment Storage ✓ T-19X(10) T-20X(12) WO-4(26)

Type of Waste: Organic liquid & water

Type of Tank: Elevated On-ground ✓ Below-grade Underground

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: Carbon Steel, fiberglass

Section A - GENERAL OPERATING REQUIREMENTS

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO ✓ YES

2. If the Tank is **uncovered**:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ✓ YES NO

Describe:

3. If the Tank is **continuous-feed**:

Is there a feed cutoff or bypass to standby Tank? N/A ✓ YES NO

Section B - WASTE ANALYSES

1. If the Tank is used to treat or store **significantly different** wastes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or

Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ✓ YES NO

*b. Are records available of these
wastes analyses in the operating record?

N/A ✓ YES NO

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates explanation/response is needed.

Section C - TANK INSPECTIONS

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass, and/or drainage system)? N/A / YES ___ NO ___
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A / YES ___ NO ___
- c. Data gathered from monitoring equipment? N/A / YES ___ NO ___
- d. Level of waste in each **uncovered** tank? N/A / YES ___ NO ___

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? N/A / YES ___ NO ___
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? / YES ___ NO ___

*3. Is a written **inspection schedule** kept at the site?

N/A / YES ___ NO ___

*4. Are adequate Tank **inspection logs** maintained for the necessary three years?

N/A / YES ___ NO ___

Section D - SPECIAL REQUIREMENTS

1. If **ignitable** and **reactive** wastes are placed in the Tank:

- a. Are they rendered non-ignitable or non-reactive or Are they protected from sources of ignition or reaction? (N/A if the Tank is used solely for emergencies) N/A / YES ___ NO ___
- b. Are they compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A / YES ___ NO ___

2. If the Tank is used to hold **incompatible** wastes:

Is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A / YES ___ NO ___

Tank Capacity & Dimensions: See part B applic. and attached registration

Comments: _____

CLOSURE & POST-CLOSURE CHECKLISTSection A - CLOSURE PLAN

1. Circle hazardous waste facilities subject to RCRA CLOSURE:

CLOSURE: C (T) SI WP LT LF I TT TR WDW O2. Does the facility have a **written closure plan**?YES ✓ NO ***3. Does the closure plan address all hazardous waste facilities?YES ✓ NO

4. Does the closure plan include:

a. A description of how and when the facility will be:

(1) Partially Closed-

N/A YES ✓ NO

(2) Finally Closed-

YES ✓ NO b. An up-to-date estimate of the **maximum inventory** of wastes in storage and treatment at any time during the life of the facility?YES ✓ NO c. An estimate of the expected **year of closure**?YES ✓ NO Year: 20195. Does the plan include a **schedule** for final closure?YES ✓ NO

Does the schedule include:

a. Time estimates

for each phase of closure for each area?

YES ✓ NO

b. Total time estimate for closure?

YES ✓ NO 6. Are the following **Steps to Close** included in the plan:

a. Removal of wastes

N/A YES ✓ NO

b. Treatment of wastes

N/A YES ✓ NO

c. Disposal of wastes

N/A ✓ YES ✓ NO

d. Cap or final cover

N/A ✓ YES NO

e. Decontamination

of equipment & structures

YES ✓ NO

f. Closure certification

YES ✓ NO YES ✓ NO 7. Has the closure plan been **amended as necessary** to reflect changes in facility operations or design?N/A ✓ YES NO

*** An entry in this column indicates explanation/response is needed.

Section B - POST-CLOSURE PLAN

Circle hazardous waste facilities subject to RCRA POST-CLOSURE.

POST-CLOSURE: SI WP LT LF O

1. Does the facility have a **written post-closure plan**? N/A ☒ YES ☐ NO ☐
2. Does the plan address all RCRA Land Disposal facilities? YES ☐ NO ☐
3. Does the plan provide for 30 years of post-closure care? YES ☐ NO ☐
4. Does the post-closure plan include:
- a. A description of planned **groundwater monitoring** activities and frequencies? YES ☐ NO ☐
- b. A description of planned **maintenance activities** and frequencies to ensure the following:
- (1) Integrity final cover or other containment YES ☐ NO ☐
- (2) Proper functioning of groundwater monitoring equipment YES ☐ NO ☐
- (3) Proper functioning of leachate collection equipment N/A ☐ YES ☐ NO ☐
- (4) Proper functioning of gas collection equipment N/A ☐ YES ☐ NO ☐
- c. Name, address and phone number of facility **contact person** for the post-closure period? YES ☐ NO ☐
- d. Requirement for notice to local **land authority**? YES ☐ NO ☐
- e. Requirement for notice in **deed to property** of haz. waste disposal and future land use restrictions? YES ☐ NO ☐
5. Has the plan been **amended as necessary** during the operating life of the facility to reflect changes in operation or design? N/A ☐ YES ☐ NO ☐
- _____
- _____
- _____
- _____
- _____

CLOSURE COSTS:

- YES ☒ NO

\$ 248,393

- YES NO

N/A ☒ YES NO

\$ _____

- | | | |
|-----|-----|----|
| N/A | YES | NO |
|-----|-----|----|

- | | N/A | YES | NO |
|---|-----|-----|----|
| 1. Do you have a current driver's license? | | | |
| 2. Do you have a current vehicle registration? | | | |
| 3. Do you have a current insurance policy? | | | |
| 4. Do you have a current safety inspection? | | | |
| 5. Do you have a current title? | | | |
| 6. Do you have a current license plate? | | | |
| 7. Do you have a current vehicle identification number (VIN)? | | | |
| 8. Do you have a current vehicle weight and capacity label? | | | |
| 9. Do you have a current vehicle safety recall notice? | | | |
| 10. Do you have a current vehicle maintenance record? | | | |
| 11. Do you have a current vehicle accident history report? | | | |
| 12. Do you have a current vehicle theft report? | | | |
| 13. Do you have a current vehicle damage report? | | | |
| 14. Do you have a current vehicle repair record? | | | |
| 15. Do you have a current vehicle inspection report? | | | |
| 16. Do you have a current vehicle safety inspection report? | | | |
| 17. Do you have a current vehicle title transfer record? | | | |
| 18. Do you have a current vehicle license transfer record? | | | |
| 19. Do you have a current vehicle insurance claim record? | | | |
| 20. Do you have a current vehicle accident report? | | | |
| 21. Do you have a current vehicle theft report? | | | |
| 22. Do you have a current vehicle damage report? | | | |
| 23. Do you have a current vehicle repair record? | | | |
| 24. Do you have a current vehicle inspection report? | | | |
| 25. Do you have a current vehicle safety inspection report? | | | |
| 26. Do you have a current vehicle title transfer record? | | | |
| 27. Do you have a current vehicle license transfer record? | | | |
| 28. Do you have a current vehicle insurance claim record? | | | |
| 29. Do you have a current vehicle accident report? | | | |
| 30. Do you have a current vehicle theft report? | | | |
| 31. Do you have a current vehicle damage report? | | | |
| 32. Do you have a current vehicle repair record? | | | |
| 33. Do you have a current vehicle inspection report? | | | |
| 34. Do you have a current vehicle safety inspection report? | | | |
| 35. Do you have a current vehicle title transfer record? | | | |
| 36. Do you have a current vehicle license transfer record? | | | |
| 37. Do you have a current vehicle insurance claim record? | | | |
| 38. Do you have a current vehicle accident report? | | | |
| 39. Do you have a current vehicle theft report? | | | |
| 40. Do you have a current vehicle damage report? | | | |
| 41. Do you have a current vehicle repair record? | | | |
| 42. Do you have a current vehicle inspection report? | | | |
| 43. Do you have a current vehicle safety inspection report? | | | |
| 44. Do you have a current vehicle title transfer record? | | | |
| 45. Do you have a current vehicle license transfer record? | | | |
| 46. Do you have a current vehicle insurance claim record? | | | |
| 47. Do you have a current vehicle accident report? | | | |
| 48. Do you have a current vehicle theft report? | | | |
| 49. Do you have a current vehicle damage report? | | | |
| 50. Do you have a current vehicle repair record? | | | |
| 51. Do you have a current vehicle inspection report? | | | |
| 52. Do you have a current vehicle safety inspection report? | | | |
| 53. Do you have a current vehicle title transfer record? | | | |
| 54. Do you have a current vehicle license transfer record? | | | |
| 55. Do you have a current vehicle insurance claim record? | | | |
| 56. Do you have a current vehicle accident report? | | | |
| 57. Do you have a current vehicle theft report? | | | |
| 58. Do you have a current vehicle damage report? | | | |
| 59. Do you have a current vehicle repair record? | | | |
| 60. Do you have a current vehicle inspection report? | | | |
| 61. Do you have a current vehicle safety inspection report? | | | |
| 62. Do you have a current vehicle title transfer record? | | | |
| 63. Do you have a current vehicle license transfer record? | | | |
| 64. Do you have a current vehicle insurance claim record? | | | |
| 65. Do you have a current vehicle accident report? | | | |
| 66. Do you have a current vehicle theft report? | | | |
| 67. Do you have a current vehicle damage report? | | | |
| 68. Do you have a current vehicle repair record? | | | |
| 69. Do you have a current vehicle inspection report? | | | |
| 70. Do you have a current vehicle safety inspection report? | | | |
| 71. Do you have a current vehicle title transfer record? | | | |
| 72. Do you have a current vehicle license transfer record? | | | |
| 73. Do you have a current vehicle insurance claim record? | | | |
| 74. Do you have a current vehicle accident report? | | | |
| 75. Do you have a current vehicle theft report? | | | |
| 76. Do you have a current vehicle damage report? | | | |
| 77. Do you have a current vehicle repair record? | | | |
| 78. Do you have a current vehicle inspection report? | | | |
| 79. Do you have a current vehicle safety inspection report? | | | |
| 80. Do you have a current vehicle title transfer record? | | | |
| 81. Do you have a current vehicle license transfer record? | | | |
| 82. Do you have a current vehicle insurance claim record? | | | |
| 83. Do you have a current vehicle accident report? | | | |
| 84. Do you have a current vehicle theft report? | | | |
| 85. Do you have a current vehicle damage report? | | | |
| 86. Do you have a current vehicle repair record? | | | |
| 87. Do you have a current vehicle inspection report? | | | |
| 88. Do you have a current vehicle safety inspection report? | | | |
| 89. Do you have a current vehicle title transfer record? | | | |
| 90. Do you have a current vehicle license transfer record? | | | |
| 91. Do you have a current vehicle insurance claim record? | | | |
| 92. Do you have a current vehicle accident report? | | | |
| 93. Do you have a current vehicle theft report? | | | |
| 94. Do you have a current vehicle damage report? | | | |
| 95. Do you have a current vehicle repair record? | | | |
| 96. Do you have a current vehicle inspection report? | | | |
| 97. Do you have a current vehicle safety inspection report? | | | |
| 98. Do you have a current vehicle title transfer record? | | | |
| 99. Do you have a current vehicle license transfer record? | | | |
| 100. Do you have a current vehicle insurance claim record? | | | |
| 101. Do you have a current vehicle accident report? | | | |
| 102. Do you have a current vehicle theft report? | | | |
| 103. Do you have a current vehicle damage report? | | | |

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CLOSURE PLAN

PART I

A. Tanks that may contain hazardous waste.

1. Number of tanks - 16.
2. Maximum capacity of tanks - 304,730 gallons.
3. Maximum inventory at time of closure - 100% of capacity or 304,730 gallons.
4. Auxiliary equipment requiring decontamination - associated pumps and piping.
5. Schedule of final closure.
 - a. Approximate date after which hazardous waste will no longer be received - January 1, 2019.
 - b. Estimate of total time required for closure - 180 days or less.
 - c. Estimate of time required for intervening closure activities.
 - (1) Time required for removal of hazardous material - 90 days.
 - (2) Time required for decontamination of auxiliary equipment - 90 days or less.

B. Removal of hazardous waste from tank facility.

1. Pretreatment - none will be required.
2. On-site treatment or disposal - none.
3. Off-site treatment or disposal.
 - a. Quantity - 304,730 gallons.
 - b. Method of treatment or disposal - incineration, physical fixation followed by secure landfilling, and/or deep-well injection.
 - c. Approximate distance of off-site TSD - 1.5 miles

C. Decontaminating the tank facility

1. Surface area with potential soil contamination - none
 - a. Areas with potential soil contamination - none
 - (1) Number of soil samples required - none
 - (2) Criteria for determining contamination - not applicable
 - b. Estimated depth of soil requiring removal - not applicable.

c. Total amount of contaminated soil - none.

(1) Amount of contaminated soil disposed on site - none.

(2) Amount of contaminated soil disposed off-site - none.

2. Decontamination of facility equipment.

a. Tanks

(1) Method - tanks will be solvent washed and/or water washed by company personnel. These washings will be passed through the tank's pump and associated piping to decontaminate those components.

(2) Quantity of rinsings - approximately sixty percent of total tankage capacity or 182,838 gallons.

(3) Method of disposal of rinsings.

(a) Spent solvent accumulation tank-rinsings taken off-site for disposal at a TSD 1.5 miles away. Quantity equals 17,291 gallons.

(b) Water washings from tank-rinsings taken off-site for disposal at a TSD 1.5 miles away. Quantity equals 165,547 gallons.

D. Arrangements that have been or will be made with an independent registered professional engineer to obtain certification that facility has been closed in accordance with closure plan.

Contact to be initiated in advance of commencement of closure sufficient to review plant operations, material characteristics and legal requirements by commencement of closure.

RGC:ms
0710C
12/03/85

CLOSURE PLAN

PART II - COST ESTIMATES

	<u>Quantity</u>	<u>Unit Cost</u>	<u>Total Cost</u>
I. Tanks			
A. Off-Site Treatment Costs			
1. Hazardous Waste & Solvent Rinsing	322,021 gals.	\$0.63504/gal.	\$204,496.
2. Water for Rinsings	165,547 gals.	\$0.2000/gal.	33,109.
B. Personnel Labor Cost All Closure-Related Activities	160 Manhours	\$17.21/Manhour	2,788.
C. Professional Engineer Certification for Closure			<u>8,000.</u>
		Total	\$248,393.
II. The Equalization Basin See attached Table I for details		Total	\$428,900.
III. The No. 1 Lift Station See attached Table II for details		Total	<u>\$ 50,705.</u>
	GRAND TOTAL		\$727,998.

RGC:ms
0710C
12/03/85

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

HCH-710-87

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158

February 12, 1987

Texas Water Commission
P. O. Box 13087
Capitol Station
Austin, TX 78711

Attention: Mr. Wayne R. Harry
Permits Section, Hazardous and Solid Waste Division

Reference: The Lubrizol Corporation - Deer Park Facility
Industrial Solid Waste Registration No. 30324
Amended Closure Plan for Tank LAB-B

Dear Mr. Harry:

Pursuant to your recent telephone conversation with Mr. Julius Rexer and a subsequent telephone conversation with the TWC's Mr. Sam Poe, attached is an amended Closure Plan for the hazardous waste unit LAB-B, identified in the Notice of Registration as Facility No. 38, located at The Lubrizol Corporation's Deer Park Plant. The unit, which is a subsurface, steel tank used to accumulate laboratory wastes, is presently undergoing partial closure pursuant to a plan approved by the TWC on December 13, 1985. That plan describes the construction of a concrete vault which would enclose the tank. Due to unanticipated changes in Lubrizol's laboratory facilities which would result in tank LAB-B becoming inactive, The Lubrizol Corporation proposes an amended Closure Plan which describes the removal of the vessel and restoration of the site.

Accordingly, Lubrizol presents this amended Closure Plan for your review and approval. Should you have any questions regarding this matter, please contact J. A. Rexer at (713)479-2851.

Yours truly,

THE LUBRIZOL CORPORATION


H. C. Hopper

Environmental Control Mgr.

HCH:ms/1083C
Encls.

cc's: Mr. Sam Poe - TWC, Austin.
Mr. Julius Rexer - Lubrizol.

AMENDED CLOSURE PLAN FOR

SUBSURFACE TANK LAB-B

THE LUBRIZOL CORPORATION

41 TIDAL ROAD

DEER PARK, TEXAS 77536

FEBRUARY 12, 1987

Facility Description

LAB-B is a 563 gallon, horizontal, carbon steel, subsurface tank used to accumulate hazardous waste from the Deer Park plant's Quality Assurance Laboratory. Equipment ancillary to tank LAB-B includes a three-inch pipe used to carry the wastes from the laboratory building to the tank, and the concrete slab foundation on which the vessel is located. The tank is an active waste management unit operating under 90-day status.

Amended Closure Plan

A closure plan for tank LAB-B was approved by the Texas Water Commission on December 13, 1985. That plan describes, (A) the construction of a concrete vault to enclose the subsurface unit, (B) a schedule for the closure, (C) a sampling plan to determine if any contamination of the surrounding soils occurred due to the tank, and (D) certification by an independent registered professional engineer that all work was performed in accordance with the approved plan. Parts (A), (B), and (C) as shown above are revised by this amended closure plan, and new sections (E) describing the decontamination of the unit, and (F) a contingency for closure in place, are added to the plan.

The amended Closure Plan for tank LAB-B is as follows:

A. Method of Closure

The hazardous waste management unit LAB-B shall be removed from service and a clean-closure of the site performed. All wastes contained in the tank will be removed to an authorized on-or off-site treatment, storage or disposal facility. Pretreatment of the waste prior to removal is not required. The tank and ancillary equipment will be decontaminated as described in (E) of this Plan. The decontaminated tank will then be dismantled and sold for scrap value to a commercial scrap metal dealer.

The surrounding soils will be evaluated and removed if contaminated with wastes from the unit, as described in (C) of the Plan. The site will then be backfilled to surface grade with clean, clay-rich fill. A protective cover of grass, gravel, or concrete will be placed over the site to prevent erosion. Post-closure care of the site will ~~not be~~ required following the successful completion of closure by removal.

B. Closure schedule

<u>Description</u>	<u>Time Required (Weeks)</u>	<u>Completion Date (Weeks)*</u>
1. Prepare bid package	4	4
2. Decontaminate/dismantle tank	2	6
3. Excavation/disposal of soils	2	8
4. Sample/analyze remaining soils	6	14
5. Backfill & certify closure	2	16

*From date of TWC approval of Closure Plan.

C. Assessment of Soil Contamination

Soils from the surrounding area will be sampled and analyzed in accordance with the attached Sampling and Analysis Plan (Appendix A). Based on the analytical results, the soils will be evaluated and classified according to 31 TAC 335.1 and 31 TAC 335.62. Contaminated soils will be removed until background levels are achieved. The Southeast Regional Office (Deer Park, TX) of the Texas Water Commission will be notified ten (10) days prior to any backfilling activity so that verification samples can be taken, if desired. All excavated soils will be disposed of in an appropriate commercial treatment, storage, disposal facility.

The parameters for identifying affected soils will be:

<u>Compound</u>	<u>EPA Method</u>	<u>Probable Detection Level (PPM)</u>
Cyclohexane	8270	5.0
Heptane	8240	5.0
Toluene	8240	5.0
Xylene	8270	5.0
TOC	--	1.0

Background levels will be considered met if the analyses of each of the identified constituents is at or below detection limits, or the constituent analyses are not significantly different from background soil analyses at the 99% confidence level. Background analyses will be obtained from a soil sample taken at a depth of approximately six (6) feet from a location agreed upon by TWC Regional Office and Lubrizol representatives.

D. Certification of Closure

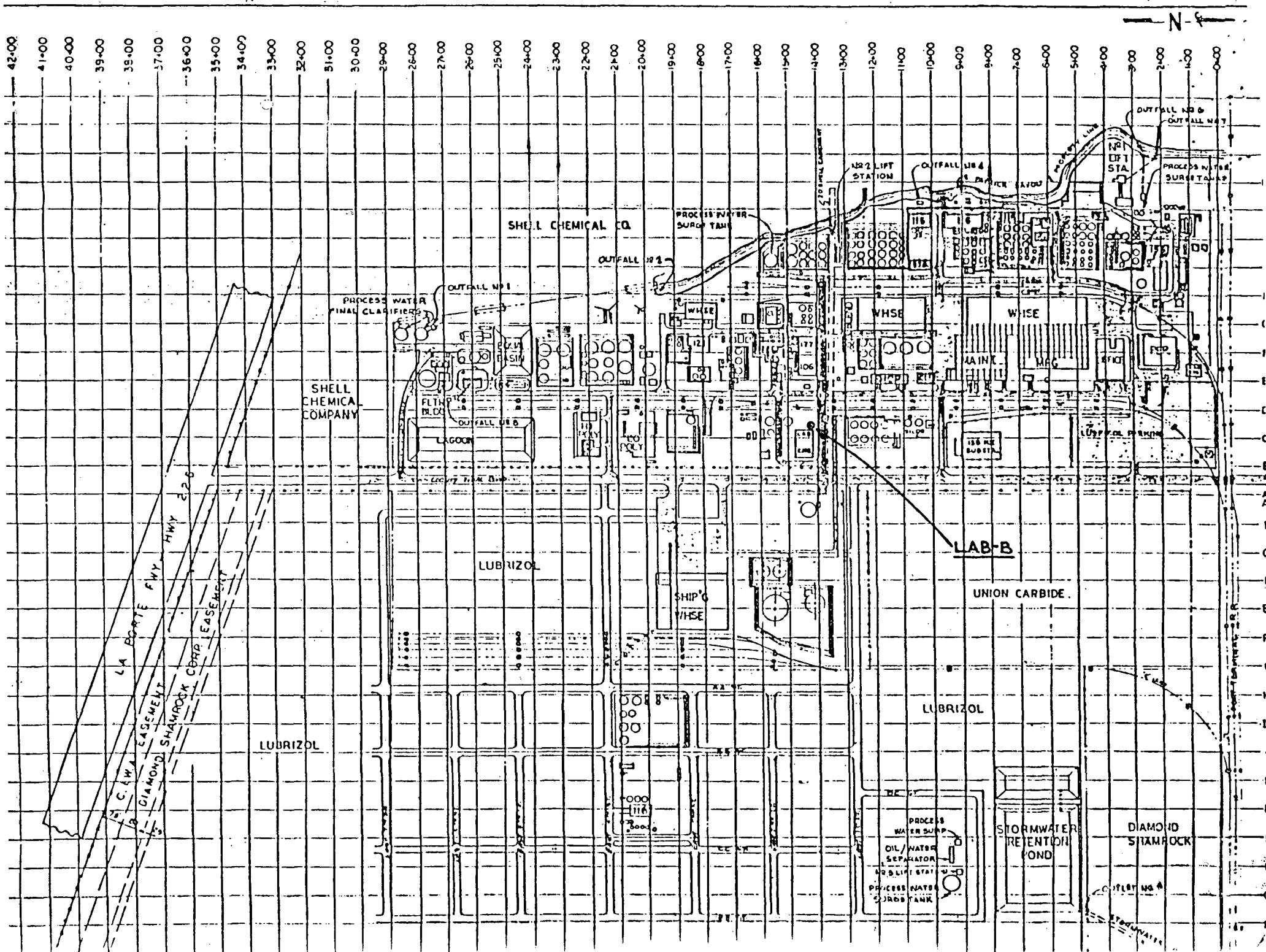
Arrangements will be made with an independent Registered Professional Engineer to visit the site, review all activities performed and analytical data obtained, and certify that closure was performed in accordance with this Plan. Upon completion of all activities, a final report will be submitted to the Texas Water Commission by The Lubrizol Corporation and the independent engineer. In addition, all pertinent documents, such as the Notice of Registration, will be revised to show the new status of the unit.

E. Decontamination

○ Prior to washing, LAB-B and the piping will be sealed using suitable fittings and transported to a concreted area drained by a process sewer. The tank and piping will then be thoroughly washed with a water-detergent mixture followed by a clear water rinse. The wash and rinse steps will be repeated until the rinsings show no visible evidence of contamination. The final rinse water will be sampled and analyzed for TOC by an EPA approved method. All decontamination steps, sampling and analysis will be performed by Lubrizol personnel. The tank and piping will be considered decontaminated when the rinse water contains 75 mg/L TOC or less. All washings and rinsings will be processed in Lubrizol's NPDES-permitted wastewater treatment unit. The total volume of washings and rinsings is not expected to exceed 2,500 gallons.

F. Contingency

If all contaminated soils cannot be practicably removed and a clean closure cannot be implemented, The Lubrizol Corporation will submit to the Texas Water Commission a detailed plan and revised schedule for the in-place closure of this unit. The contingency plan will include the description and details of any post-closure measures required. Written approval by the TWC must be obtained prior to the implementation of any contingent closure activities.



APPENDIX A

Sampling and Analysis Plan for Soils
Surrounding the Subsurface Tank LAB-BSampling Protocol

Five samples of soil surrounding the subsurface tank, representing the four faces and the bottom of the site, will be collected. Plan-view and top-view drawings of appropriate scale will be provided showing the locations of all sampling. All samples taken from the surrounding soils will be obtained using a trowel. The sampling will be performed under the supervision of an independent Registered Professional Engineer or representative of the TWC and a chain-of-custody form will accompany the samples to ensure proper handling and disposition. Any additional sampling will abide by these protocols.

Analytical Plan

1. All analyses will be performed by an independent analytical laboratory.
2. All analyses will be performed in accordance with Test Methods for Evaluating Solid Waste, SW-846, 2nd Edition, USEPA, 1982.
3. The soil samples will be analyzed for the following potential contaminants:
 - a. Cyclohexane
 - b. Heptane
 - c. Toluene
 - d. Xylene
 - e. TOC

Verification

1. The Southeast Regional Office of the TWC will be notified ten (10) days in advance of any sampling so that split samples, if desired, can be obtained.
2. All analytical results and statistical evaluations will be included in the final closure report filed with the Executive Director of the Texas Water Commission.

8. Have records been kept of:

- a. Analyses for ground water parameters? YES ☒ NO ☐
- b. Calculations of means and variances? YES ☒ NO ☐
- c. Water surface elevations taken at each well sampling event? YES ☒ NO ☐
- d. Calculations of significant differences? N/A ☐ YES ☒ NO ☐
- e. Analyses of duplicate samples for contamination confirmation? N/A ☐ YES ☒ NO ☐
- f. Analyses of samples taken as a result of implementing the Ground Water Quality Assessment Plan? N/A ☐ YES ☒ NO ☐
- g. Results of Ground Water Quality Assessment Plan? N/A ☐ YES ☒ NO ☐
- (1). Rates of Migration? YES ☒ NO ☐
- (2). Concentration of hazardous waste and/or constituents thereof? YES ☒ NO ☐
- (3). Analyses of quarterly ground water samples? YES ☒ NO ☐
- h. Copies of the **annual reports** of the groundwater monitoring program? YES ☒ NO ☐

9. Are self-reporting data being submitted on the appropriate TWC forms?

YES ☒ NO ☐

+NOTE: Complete remaining checklists as applicable to each Waste Management Area+

Comments: Confirmed contamination in Equalization Basin
Kicked it into corrective Action.

FIRST YEAR BACKGROUND SAMPLING

1. Are all samples analyzed for:

a. EPA Drinking Water Standards?

YES _____ NO _____

b. Ground water quality parameters?

YES _____ NO _____

c. Contamination indicator parameters?

YES _____ NO _____

2. Are 4 replicate measurements of **contamination indicator parameters** made for each well sample?

YES _____ NO _____

3. Are ground water **surface elevations** determined at each well sampling event?

YES _____ NO _____

4. Briefly explain why facility is performing first-year sampling at this time:

*** An entry in this column indicates explanation/response is needed.

GW SEMI-ANNUAL DETECTION MONITORINGWaste Management Area(s) N/A

1. Was the **first year** background sampling program adequately completed? YES ___ NO ___
2. Are wells sampled and analyzed annually for **ground water quality parameters**? YES ___ NO ___
3. a. Are wells sampled and analyzed semi-annually for **contamination indicator parameters**? YES ___ NO ___
 b. Are 4 replicate measurements of indicator parameters made for each upgradient and downgradient well sample? YES ___ NO ___
4. Are ground water **surface elevations** determined at each well for each sampling event? YES ___ NO ___
5. Were ground water surface elevations evaluated annually to determine whether monitoring wells are properly placed? YES ___ NO ___
6. Were **changes** to the monitoring system necessary to maintain compliance with CFR 265.91? YES ___ NO ___
 If yes, describe in comments. _____
7. Are statistical comparisons, using the Student's t-test at the 0.01 level of significance, performed? YES ___ NO ___
 a. Between the initial background mean and mean of current **upgradient** well analyses for each contamination indicator parameter? YES ___ NO ___
 b. Between the initial background mean and mean of current **downgradient** well analyses for each contamination indicator parameter? YES ___ NO ___
8. If there is more than one upgradient well: Are all the background data combined resulting in one background mean with variance for each contamination parameter **or** Is each upgradient well mean and variance compared separately with down-gradient well analyses? (NOTE: Circle the appropriate phrase)
9. Have significant increases (or pH decreases) in contamination indicator parameters been found in the:
 - a. Upgradient wells? YES ___ NO ___
 (1) If yes, did the company report the upgradient well change on the annual report N/A ___ YES ___ NO ___
 - b. Downgradient wells? YES ___ NO ___

*** An entry in this column indicates explanation/response is needed.

10. If significant increases (or pH decreases)
in downgradient wells were detected, did the company:

- a. Resample the "affected" well(s), split the sample in two, and re-analyze for the parameter(s) that showed significant difference? N/A ___ YES ___ NO ___ ***
- b. Confirm the significant difference? N/A ___ YES ___ NO ___
- c. Notify the TWC Executive Director within 7 days of confirmation? N/A ___ YES ___ NO ___
- d. Submit a certified Ground Water Quality Assessment Plan within 15 days of notifying the Executive Director? N/A ___ YES ___ NO ___

11. Has the facility resumed detection monitoring at this WMA after determining in an assessment that no hazardous waste or constituents were detected in the groundwater?

N/A ___ YES ___ NO ___

a. If yes, when was detection monitoring resumed? _____

NOTE: Complete "GW Assessment Monitoring Checklist" if detection monitoring was resumed since the last inspection.

12. Has the facility modified the t-test procedure to reduce the occurrence of "false positive" statistical indications?

YES ___ NO ___

b. Describe changes in comments or include attachments.

c. Date of TWC approval: _____

13. Has the facility substituted other parameters in place of pH, conductivity, TOC and/or TOX?

YES ___ NO ___

b. List the parameters: _____

c. Date of TWC approval: _____

Comments: _____

GW ASSESSMENT MONITORINGWaste Management Area(s) Equalization Basin

1. Has the facility started to implement an approved Ground Water Quality Assessment Plan? N/A YES ☒ NO 9
 Date plan was started: 1984.
*Compliance plan will address → no agreement in action
 ~ 1981 found problem → closure*
2. If the GWQA plan is in progress, give projected completion date _____
 and describe actions to date: _____

Plan in 1984

- a. Is the facility on schedule? N/A ☒ YES NO
3. If the plan has been completed, give date of Ground Water Quality Assessment Report: 12-28-84 *Now corrective action plan*
4. Do results indicate that hazardous waste or constituents have been detected? N/A YES ☒ NO NO
- a. If yes, Has a Quarterly Assessment Monitoring Program been implemented? YES ☒ NO NO
- b. If no, was detection monitoring reinstated? YES NO
- c. If facility has not responded appropriately, explain why in comments.

++++ NOTE: IF ANSWER TO QUESTION 4b IS YES, STOP HERE. +++++

5. List the hazardous waste constituents detected: Inconsistencies noted
in indicator parameters

ERM & Law Engineering

6. Has the facility Sampling and Analysis Plan been revised to include these parameters? *already included* N/A ☒ YES ☒ NO NO
7. Quarterly, since completion of the assessment, has the facility continued to:
- a. Sample and analyze for hazardous waste or constituents? N/A YES ☒ NO NO
- b. Determine rate and extent of migration of hazardous waste or constituents? N/A YES ☒ NO NO

*** An entry in this column indicates explanation/response is needed.

8. Yearly, has the facility reported the results of the assessment program (with annual waste report), to include the calculated (or measured) rate of migration of hazardous waste or constituents in ground water during the reporting period? N/A ___ YES ☒ NO ___ ***

9. If t-test failures have occurred at the WMA during its post-closure care period, has facility complied with:

a. Retesting to confirm t-test failures? N/A ☒ YES ___ NO ___

b. Notifying TWC within 7 days of confirmation? N/A ☒ YES ___ NO ___

c. Submittal of approved plan? N/A ☒ YES ___ NO ___

d. Completion of approved plan? N/A ☒ YES ___ NO ___

10. Does the WMA contain a "regulated unit"* subject to 40 CFR 264 Subpart F compliance monitoring requirements? YES ☒ NO ___

a. If yes, has the assessment detected hazardous waste or constituents in ground water at this WMA? N/A ___ YES ☒ NO ___

b. If yes, has the facility sampled and analyzed for all hazardous waste constituents (Appendix VIII, 40 CFR 261) to characterize the plume in accordance with 40 CFR 270.14(c)(4)? N/A ___ YES ☒ NO ___


c. If no, report this information to the TWC Groundwater Enforcement Unit in the TWC Central Office.

Comments: See attached sampling data for No. 1 Lift
Station.

* Land Disposal facility that received hazardous waste after July 26, 1982.
*** An entry in this column indicates explanation/response is needed.


AMENDED NO. 1 LIFT STATION CLOSURE PLAN

THE LUBRIZOL CORPORATION
Deer Park, Texas


Larry M. McGaughey, Ph.D., P.E.

June 6, 1986

W.O. #03-20


Douglas S. Diehl, P.E.
President

Prepared By:

ERM-Southwest, Inc.
8989 Westheimer, Suite 111
Houston, Texas 77063
(713) 789-6652

4 - POST-CLOSURE PLAN

4.1 General

All hazardous wastes have been removed from the skimmer basin. Trace constituents from plant wastewater remaining in soils are present in non-hazardous quantities. A post-closure ground water monitoring program is proposed to detect migration of the trace constituents remaining in place.

The approximate distance from the closed basin to the furthest downgradient monitoring well is about 90 feet. Based on a minimum ground water flow velocity of about 30 feet/year, it would take about three years for waste constituents to appear in the furthest well. It is therefore planned to perform post-closure ground water monitoring for a period of three years after closure. Monitoring wells will be sampled quarterly for the first year and semi-annually thereafter. Ground water samples will be analyzed for pH (field), Specific Conductance (field), and phenol (Method 4AAP).

The closed facility is located within the Lubrizol plant site. Lubrizol will maintain the integrity of the concrete slab above the closed basin throughout operation of the chemical plant, which is expected to continue for more than 30 years. During plant operation Lubrizol will repair or replace the concrete slab as necessary to prevent the percolation of precipitation and surface runoff to the affected soils remaining in place. The Facility Contact for obtaining site information during post-closure will be the Senior Environmental Control Manager at the Deer Park plant. The present Senior Environmental Control Manager at the Deer Park plant is Robert G. Copes.

The plant security system will restrict access of the general public to the site during the post-closure period. The entire Deer Park plant is surrounded by a six-foot chain link security fence and all gates are either locked or manned by a security guard. This security system is adequate to prohibit the unauthorized entry of persons into the facility.

SAKE, GSW/FSH, FSH, IDNA, GAO.

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



Larry R. Soward, Executive Director
Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

August 26, 1986

Mr. Robert C. Copes
Environmental Control Manager
The Lubrizol Corporation
P.O. Box 158
Deer Park, Texas 77536

Re: Solid Waste Registration No. 30324
Review of No. 1 Lift Station Closure

Dear Mr. Copes:

We have concluded review of Lubrizol's amended closure plan for the No. 1 Lift Station (Facility Unit No. 1 on your Notice of Registration) submitted by your letter of June 6, 1986. Our review indicates that the plan along with the modifications stated herein, substantially conforms with the applicable requirements of 40 CFR Part 265 Subpart G and 40 CFR 265.197.

This letter constitutes Executive Director approval of the above-referenced closure plan with incorporation of the following modifications:

1. Post-closure ground-water monitoring will continue on a quarterly schedule. The parameters will include: pH, specific conductance, barium and total phenol. Barium shall be analyzed by utilizing an EPA approved method.
2. Prior to constructing on or in the vicinity of the subject waste management unit after final closure, plans which detail the steps to be taken to protect the integrity of the cap shall be submitted to TWC for review.

Mr. Robert G. Copes

Page 2

August 26, 1986

If you have any questions regarding the above, please contact Carol Boucher of the RCRA Ground Water Enforcement Unit at (512) 463-8425.

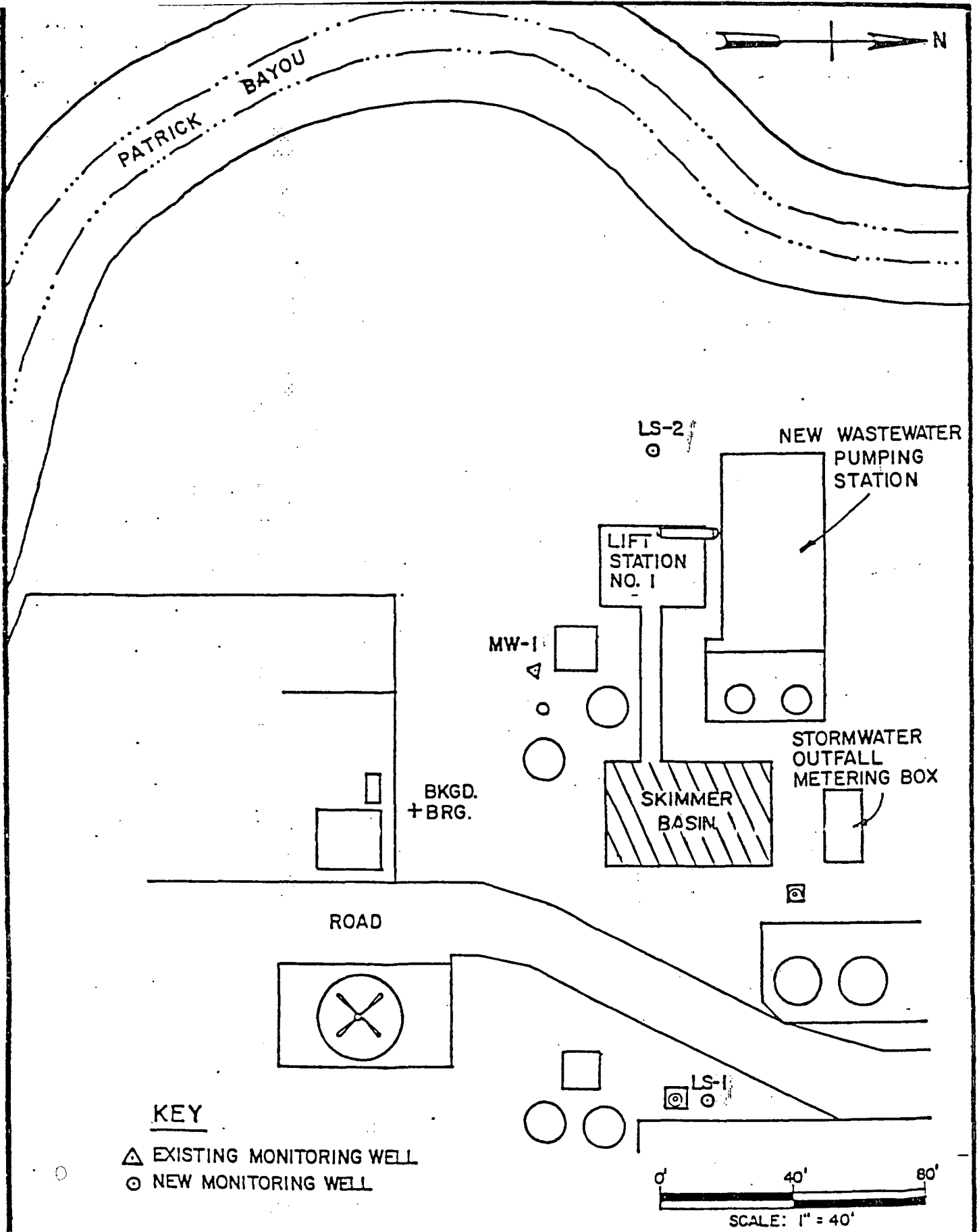
Sincerely,

A handwritten signature in black ink, appearing to read 'B. W. Dixon', is written over the typed name.

Bryan W. Dixon, P.E., Director
Hazardous and Solid Waste Division

CB:mh

cc: Dwight Russell, Permits
Wayne Harry, Permits
Russell Kimble, Reports and Management Group
TWC Southeast Region, Deer Park Office



ERM-Southwest, Inc.
HOUSTON, TEXAS

FIGURE I-1
NO. 1 LIFT STATION AREA
LUBRIZOL CORPORATION
DEER PARK PLANT

LIFT STATION WELL # 1

1st Set
1/28/87 4/13/87

NO.1 LIFT STATION
MON. WELL LS/01 UPGRADE



PH-UNITS	7.30	7.24
CONDUCTIVITY MMHOS	1800.00	1900.00
BARIUM, TOTAL MG/L	9.30	0.21
PHENOL, TOTAL MG/L	<0.05	0.05

James A. Long

LIFT STATION
MONITORING WELL #1

1st SET

1/28/87 4/13/87

NO.1 LIFT STATION
(MW-1) MON. WELL #1 ~~2-26-87~~

PH-UNITS	7.24	7.23
CONDUCTIVITY MMHOS	1600.00	2100.00
BARIUM, TOTAL MG/L	13.40	0.51
PHENOL, TOTAL MG/L	<0.05	0.06

James A. Long

LIFT STATION WELL # 2

1st SET
1/29/87 4/13/87

NO.1 LIFT STATION
MON. WELL LS/02 ~~DOWNGRADE~~

PH-UNITS	7.35	7.48
CONDUCTIVITY MMHOS	4800.00	5100.00
BARIUM, TOTAL MG/L	8.90	2.03
PHENOL, TOTAL MG/L	<0.05	0.13

James A. Camp

NOTICE OF REGISTRATION (CONTINUED)

PAGE 2

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D001, F005, U031, U122, U140, U147, U154, U188, U239, F003

005 SODIUM ALUMINATE IH 900880 ON-SITE/SECONDARY USE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D002

006 SULFUR WASTE/SCRAP II 270240 OFF-SITE/SOLD FOR RECOVERY

007 PARAFFIN, CHLORINATED I 111920 NO LONGER GENERATED

008 SCRUBBER WATER IH 908260 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D002

009 CLARIFIER SLUDGE CONTAINING TRACE ORGANICS IH 948930 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D001

010 SOLVENTS, NON-HALOGENATED IH 913860 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): F005

011 LAB WASTE, MISC. ORGANIC LIQUID IH 910590 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D001

(012) CARBON DISULFIDE IH 981690 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): P022

(013) N-BUTYL ALCOHOL IH 914990 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U031

(014) ISOBUTYL ALCOHOL IH 914250 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U140

(015) METHANOL IH 911080 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U154

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

016 PHENOL IH 913640 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U188

017 XYLENE/XYLOL IH 910030 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U239

018 SOIL, CONTAMINATED IH 970490 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): P022, U031, U140, U147, U154, U188, U189, U239

* 019 ORGANIC LIQUID AND WATER IH 915490 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D001

* 020 ORGANIC LIQUID AND WATER I 115490 ON-SITE/OFF-SITE

021 OIL, CRANKCASE IH 915530 ON-SITE/OFF-SITE/SOL
D FOR RECOVERY

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS):

022 ION EXCHANGE RESIN I 149990 ON-SITE/OFF-SITE

023 ASBESTOS INSULATION I 179390 ON-SITE/OFF-SITE

024 FILTER CAKE MEDIA IH 940370 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D005

025 PHOSPHOROUS PENTASULFIDE IH 972660 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U189

II. SHIPPING/REPORTING: PURSUANT TO TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TWC PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, ISSUANCE OF MANIFESTS AND MONTHLY REPORTING ARE REQUIRED FOR OFF-SITE STORAGE/PROCESSING/DISPOSAL OF THE FOLLOWING CLASS I WASTES LISTED IN PART I. A SHIPMENT SUMMARY REPORT SHOULD BE SUBMITTED FOR EACH MONTH NOT LATER THAN THE 25TH OF THE FOLLOWING MONTH.

008 908260 SCRUBBER WATER

009 948930 CLARIFIER SLUDGE CONTAINING TR

NOTICE OF REGISTRATION (CONTINUED)

PAGE 4

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

ACE ORGANICS

010	913860	SOLVENTS, NON-HALOGENATED
011	910590	LAB WASTE, MISC. ORGANIC LIQUID
012	981690	CARBON DISULFIDE
013	914990	N-BUTYL ALCOHOL
014	914250	ISOBUTYL ALCOHOL
015	911080	METHANOL
016	913640	PHENOL
017	910030	XYLENE/XYLOL
018	970490	SOIL, CONTAMINATED
019	915490	ORGANIC LIQUID AND WATER
020	115490	ORGANIC LIQUID AND WATER
021	915530	OIL, CRANKCASE
022	149990	ION EXCHANGE RESIN
023	179390	ASBESTOS INSULATION
024	940370	FILTER CAKE MEDIA
025	972660	PHOSPHOROUS PENTASULFIDE

III. ON-SITE WASTE MANAGEMENT FACILITIES:

FAC NO.	FACILITY	STATUS
01	TANK (SUB-SURFACE) STORAGE OF WASTE NUMBER(S) 001, 002, 006 REINFORCED CONCRETE BOX	INACTIVE
	<i>Bio Sludge (II) Sulfur (II)</i>	
02	BULK STORAGE AREA (ENCLOSED) STORAGE OF WASTE NUMBER(S) 003 40 CU. YD. STEEL BINS	ACTIVE
	<i>refuse</i>	
03	TANK (SURFACE) STORAGE FOR LESS THAN 90 DAYS OF WASTE NUMBER(S) 009 4849 GAL., CARBON STEEL VESSEL C-61	ACTIVE
	<i>clarifier Sludge/w/ org. (H)</i>	

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

- 04 TANK (SURFACE)
STORAGE FOR LESS THAN 90 DAYS *org. liquid water (T)* ACTIVE *found high Ba will resample.*
OF WASTE NUMBER(S) 019, 020 *" " (H)*
5000 GAL *Earlman may 26 11W*
TANK W0-1 CARBON STEEL
- 05 TANK (SURFACE)
STORAGE FOR LESS THAN 90 DAYS *org. liq H + NH* ACTIVE
OF WASTE NUMBER(S) 019, 020 *HW*
13709 GAL
FIBERGLASS VESSEL - W0-3
- 06 TANK (SURFACE)
STORAGE FOR LESS THAN 90 DAYS *org. liq + water (H + NH)* ACTIVE
OF WASTE NUMBER(S) 019, 020
8408 GAL
CARBON STEEL VESSEL - W-05
- 07 TANK (SURFACE)
STORAGE
OF WASTE NUMBER(S) 010, 011, 019, 020, 021 ACTIVE
25320 GAL *solvents (H)*
CARBON STEEL VESSEL W0-6 *lab waste (H)*
*org. liq (H + NH) **
oil (H)
- 08 TANK (SURFACE)
STORAGE FOR LESS THAN 90 DAYS
OF WASTE NUMBER(S) 019, 020 *org. liq (H + NH) and* ACTIVE
10000 GAL *comp's*
CARBON STEEL VESSEL T-19P
- 09 TANK (SURFACE)
STORAGE FOR LESS THAN 90 DAYS *org. liq. (H + NH)* ACTIVE
OF WASTE NUMBER(S) 019, 020
4500 GAL
FIBERCAST T19-W
- 10 TANK (SURFACE)
STORAGE
OF WASTE NUMBER(S) 020 *org. liq. (NH)* ACTIVE
10000 GAL *NH*
CARBON STEEL T-19X
- 11 TANK (SURFACE)
STORAGE FOR LESS THAN 90 DAYS *org. liq. (H + NH)* ACTIVE
OF WASTE NUMBER(S) 019, 020
12000 GAL *HW*
CARBON STEEL T-19Y
- 12 TANK (SURFACE)
STORAGE
OF WASTE NUMBER(S) 020 *org. liq. (NH)* INACTIVE
16000 GAL
CARBON STEEL T-20X
PROCESS TANK

NOTICE OF REGISTRATION (CONTINUED)

PAGE 6

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

- 13 TANK (SURFACE) ACTIVE
STORAGE FOR LESS THAN 90 DAYS (asbestos) (H)
OF WASTE NUMBER(S) 005
12000
CARBON STEEL T-23X
- 14 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 008 scrubber water (H)
15231
DERAKANE 470 CA-1 permitted
- 15 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 008 scrubber water (H)
10000 GAL
DERAKANE 470 J-42 permitted.
- 16 TANK (SURFACE) ACTIVE
STORAGE FOR LESS THAN 90 DAYS org lig. & water (H & NH)
OF WASTE NUMBER(S) 019, 020
12126 GAL
CARBON STEEL H-6
Hw!
- 17 TANK (SURFACE) ~~INACTIVE~~ closed
STORAGE
OF WASTE NUMBER(S) 019
6000 GAL
CARBON STEEL EFFLUENT TANK CAR SHELL
org lig (H)
- 18 TANK (SURFACE) ~~INACTIVE~~ but on permit
STORAGE
OF WASTE NUMBER(S) 010, 011, 021 solvents (H) w/seek permit
18000 GAL lab waste (P) amend cert
CARBON STEEL B-32 oil (H) later.
- 19 BULK STORAGE AREA (ENCLOSED) ACTIVE
STORAGE
OF WASTE NUMBER(S) 002 Bio sludge (H)
3-30 CU. YD. STEEL BINS
- 20 CONTAINER STORAGE AREA ACTIVE
STORAGE
OF WASTE NUMBER(S) 012, 013, 014, 015, 016, 017,
018
DRUM STORAGE LESS THAN 90 DAYS
- 21 BULK STORAGE AREA ACTIVE
STORAGE FOR LESS THAN 90 DAYS
OF WASTE NUMBER(S) 024
30 CU. YD. Barium filler waste
1 STEEL BIN, NO. WC3C,
- 22 BULK STORAGE AREA ACTIVE
STORAGE
OF WASTE NUMBER(S) 001, 002, 006, 020
II Hazch wood - 0101

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

2 - 30 CU. YD. STEEL BINS, NOS. WC2A AND WC2B

23 BULK STORAGE AREA ACTIVE
STORAGE

OF WASTE NUMBER(S) 001, 002, 006 ^{II}

2 - 30 CU. YD. STEEL BINS, NOS. WC3A AND WC3B

24 BULK STORAGE AREA ACTIVE
STORAGE

OF WASTE NUMBER(S) 001, 002, 006 ^{II}

3 - 30 CU. YD. STEEL BINS, NOS. WC1A, WC1B AND WC1C

• 25 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 019, 020 ^{IIW}
16,521 GAL

TANK RA-3, CARBON STEEL

• 26 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 020 (NH org. liquid) ^{NA}
10,066 GAL

TANK WO-4, CARBON STEEL

27 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 020 ^{w/c}
10,000 GAL ^{NA}

TANK H-73, CARBON STEEL

• 28 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 019 ^{IIW}
5,000 GAL.

FIBERGLASS, TANK WO-2

29 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 020
1,000 GAL.

FIBERGLASS, TANK NO. RA-10 org. liq. (NH)

30 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 020 ^{NH}
1,113 GAL.

CARBON STEEL, TANK NO. WO-8

31 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 020 ^{NH}
2,110 GAL.

CARBON STEEL, TANK NO. FO-21

32 TANK (SURFACE) ACTIVE
STORAGE

OF WASTE NUMBER(S) 020
1,113 GAL. NH
CARBON STEEL, TANK NO. W0-9

33 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 020 NH
1,064 GAL.
CARBON STEEL, TANK NO. W0-10

34 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 019, 020 NH
2,484 GAL.
CARBON STEEL, TANK NO. BB-3

35 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 020 NH
10,567 GAL
CARBON STEEL, TANK NO. T/C-1

36 TANK (SURFACE) ACTIVE
STORAGE
OF WASTE NUMBER(S) 019, 020 HW
2,110 GAL.
CARBON STEEL, TANK NO. P-25

37 TANK (SURFACE) ACTIVE
STORAGE FOR LESS THAN 90 DAYS HW -
OF WASTE NUMBER(S) 011 Lab waste
345 GAL.
CARBON STEEL, TANK NO. LAB-A

38 TANK (SUB-SURFACE) ACTIVE
STORAGE FOR LESS THAN 90 DAYS
OF WASTE NUMBER(S) 011 Lab waste
563 GAL.
CARBON STEEL, TANK NO. LAB-B
SUB-SURFACE VAULTED TANK
closure in progress
need checklist

39 BULK STORAGE AREA (ENCLOSED) ACTIVE
STORAGE
OF WASTE NUMBER(S) 023 100 off-closed, then
95 CU. YD. STEEL CONTAINER ASBESTOS 4 in. x 8 in. to ground container - ETS Mercury
Pd.

40 MISCELLANEOUS STORAGE CONTAINERS ACTIVE
STORAGE
OF WASTE NUMBER(S) 019, 020 org. waste (NH & H)
250 GAL. HW
CARBON STEEL, TANK NO. 156 W/O

41 CONTAINER STORAGE AREA ACTIVE
STORAGE
OF WASTE NUMBER(S) 022 NH, TCO
55 GAL. METAL DRUMS low eye... for

NOTICE OF REGISTRATION (CONTINUED)

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REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

- | | | |
|----|--|--------|
| 42 | CONTAINER STORAGE AREA
STORAGE FOR LESS THAN 90 DAYS H
OF WASTE NUMBER(S) 025
30 GAL. FIBER DRUMS | ACTIVE |
| 43 | CONTAINER STORAGE AREA
STORAGE FOR LESS THAN 90 DAYS HW
OF WASTE NUMBER(S) 019, 020
250 GALLON, CARBON STEEL CONTAINER, P/P - W/O | ACTIVE |

UNLESS OTHERWISE STATED ABOVE, FACILITIES ARE LOCATED
AT TIDAL ROAD, DEER PARK, TEXAS
COUNTY OF HARRIS

IV. RECORDS.

- A. FOR PURPOSES OF FILING ANNUAL REPORTS PURSUANT TO TEXAS
ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TWC
PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, RECORDS
SHOULD BE MAINTAINED FOR STORAGE, PROCESSING AND/OR DISPOSAL
OF THE FOLLOWING WASTE(S) LISTED IN PART I:

- 001 270640 DIATOMACEOUS EARTH FILTER
MEDIA WITH OIL, PLASTIC, & DIRT
- 002 249950 BIOLOGICAL SLUDGE, DOMESTIC
(SEWER SLUDGE)
- 003 279760 PLANT REFUSE, GENERAL MISC.
- 005 900880 SODIUM ALUMINATE
- 006 270240 SULFUR WASTE/SCRAP
- 008 908260 SCRUBBER WATER
- 009 948930 CLARIFIER SLUDGE CONTAINING TR
ACE ORGANICS
- 010 913860 SOLVENTS, NON-HALOGENATED
- 011 910590 LAB WASTE, MISC. ORGANIC
LIQUID
- 012 981690 CARBON DISULFIDE
- 013 914990 N-BUTYL ALCOHOL
- 014 914250 ISOBUTYL ALCOHOL
- 015 911080 METHANOL
- 016 913640 PHENOL

NOTICE OF REGISTRATION (CONTINUED)

PAGE 10

REGISTRATION NUMBER: 30324

COMPANY NAME: LUBRIZOL CORP

017 910030 XYLENE/XYLOL

018 970490 SOIL, CONTAMINATED

019 915490 ORGANIC LIQUID AND WATER

020 115490 ORGANIC LIQUID AND WATER

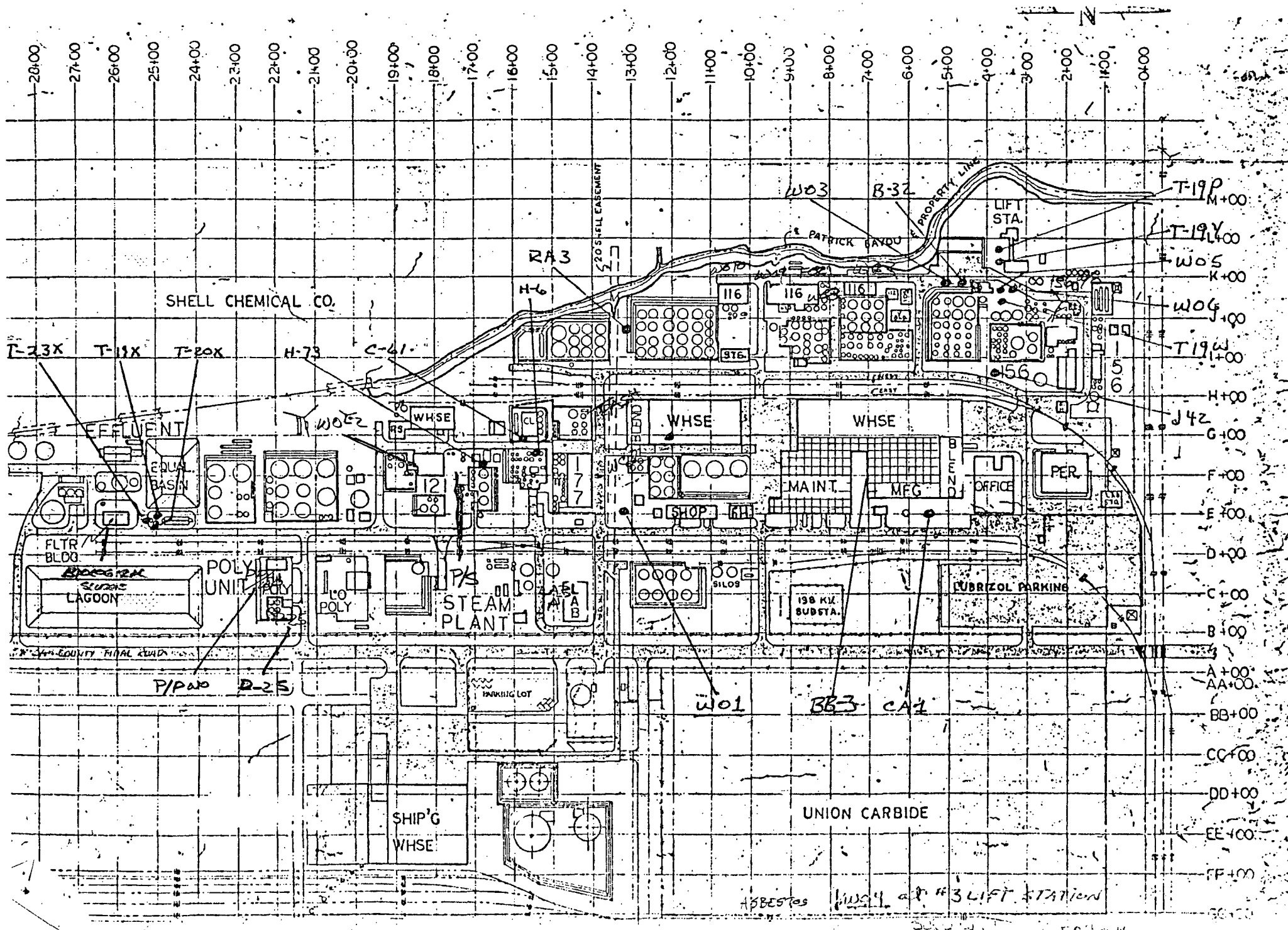
021 915530 OIL, CRANKCASE

022 149990 ION EXCHANGE RESIN

023 179390 ASBESTOS INSULATION

024 940370 FILTER CAKE MEDIA

025 972660 PHOSPHOROUS PENTASULFIDE



SHELL CHEMICAL CO.

T-23X T-19X T-20X H-73 C-41

EFFLUENT

EQUA BASIN

FLTR BLDG
LAGOON

POLY UNIT

LO POLY

STEAM PLANT

ASL A B

WHSE

WHSE

MAINT.

MFG

OFFICE

PER

LUBRIZOL PARKING

138 KVA SUBSTA.

SILOS

P/PWO D-25

PARKING LOT

SHIP'G WHSE

UNION CARBIDE

W01

BB-3 CA-1

T-19P M+00

T-19Y K+00

W05

W06

T-19W H+00

J42 G+00

F+00

E+00

D+00

C+00

B+00

A+00

AA+00

BB+00

CC+00

DD+00

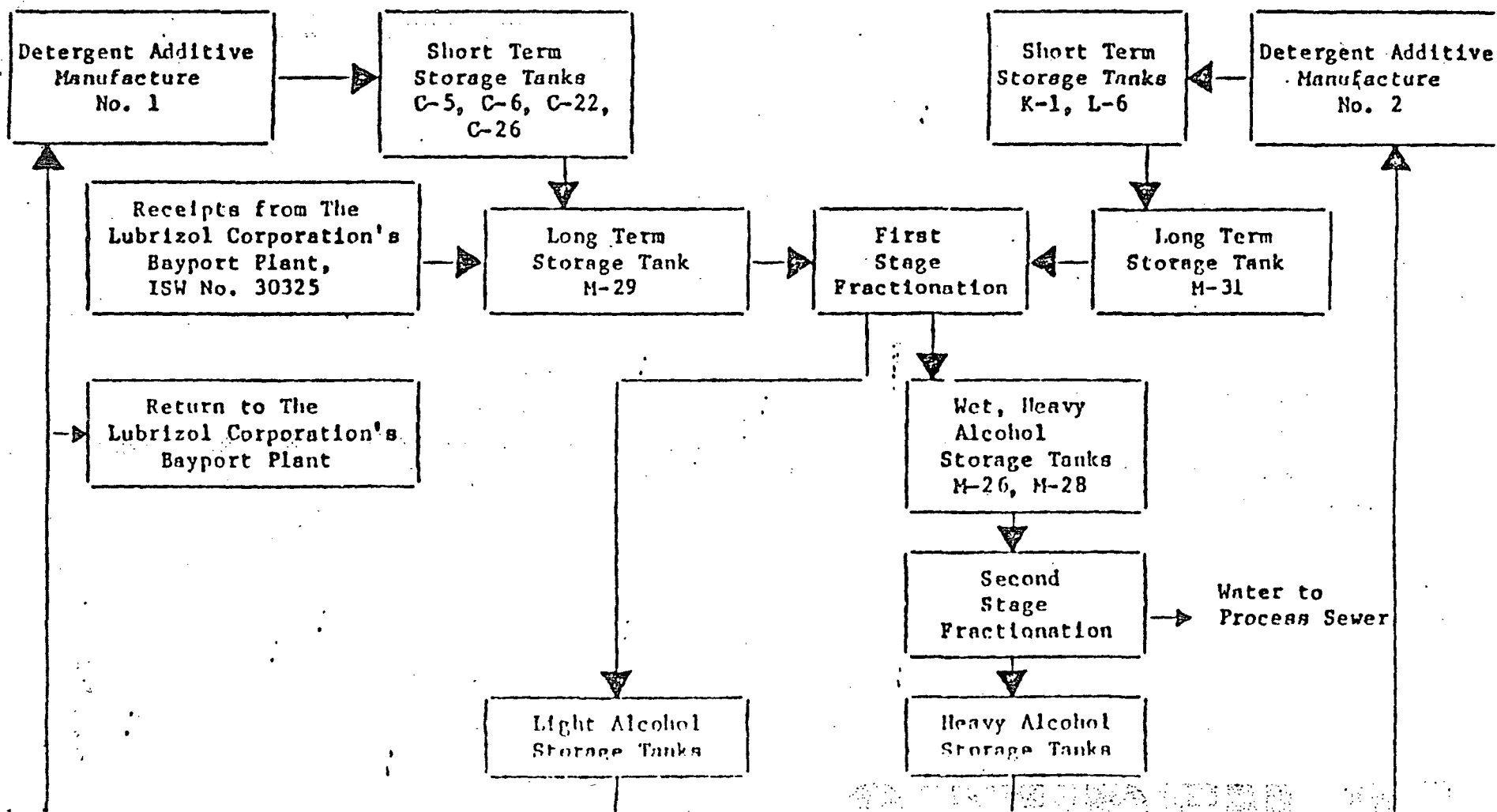
EE+00

FF+00

ABBESTES W054 at #3 LIFT STATION

PROCESS FLOW DIAGRAM

WET, MIXED ALCOHOLS FROM DETERGENT ADDITIVE MANUFACTURE



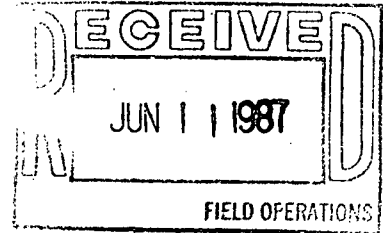
TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



Larry R. Soward, Executive Director
Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

June 8, 1987



Mr. Julius Rexer
Senior Environmental Engineer
The Lubrizol Corporation
12801 Bay Area Boulevard
Pasadena, Texas 77507-1397

RE: The Lubrizol Corporation, ISW Registration No. 30324

Dear Mr. Rexer:

On May 14 and 19, 1987, Ms. Sandra Parker of this office conducted an industrial solid waste compliance inspection of your facility. The following deficiencies were noted:

1. Texas Administrative Code (TAC) Section 335.62 - Hazardous Waste Determination

Several waste filter cake streams need to be tested for hazardous characteristics. The organic wastes stored in Tank BB-3 and facility 35 on the registration (tank car) must be analyzed for EP Toxicity.

2. TAC Section 335.6 (c) - Notification Requirements

The Notice of Registration should be updated to include paint wastes; solvents and thinner and sand blasting media and the applicable storage units. These wastes also require a hazardous waste determination. A request to amend the registration should be sent to:

Texas Water Commission
Attention: Mr. Ed Hatton
P. O. Box 13087
Austin, Texas 78711

3. TAC Section 335.112 which references 40 CFR Part 265.173 - Management of Containers

Several containers of paint wastes were stored directly on the ground near waste facility 39 (an asbestos bin). Some of the containers were uncovered and spills were noted on the ground. The containers were not labeled or dated as required.

Mr. Julius Rexer

Page 2

June 8, 1987

6. TAC Section 335.112 which references 40 CFR 265.16 - Personnel Training
The training program and the applicable documentation is not complete.
5. TAC Section 335.112 which references 40 CFR 265.15 - General Inspection Requirements
Several tanks need to be added to the inspection schedule. In addition, Tank CA-1 has not been inspected daily as required.

Please respond to this office in writing by July 13, 1987 with your plans and implementation schedule which will ensure corrective action of the above listed deficiencies. If you have any questions, please contact Sandra Parker or me at (713)-479-5981.

Sincerely,



Tom Kearns *for*
Manager

Hazardous and Solid Waste
Southeast Region

TK/SP/amh

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



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Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

III. B. 1.



Mr. Sam Becker, Chief
Hazardous Waste Compliance Branch
U. S. Environmental Protection Agency
Region VI - 6H-C
1201 Elm Street
Dallas, Texas 75270

Re: Transmittal of Preliminary Assessment

Dear Mr. Becker:

In accordance with the agreement made between the State of Texas and the U. S. Environmental Protection Agency (EPA), transmitted herewith is the preliminary assessment (PA) for The Lubrizol Company, Deer Park. We understand that EPA has committed to a two-week review and comment period for PAs so that the Texas Water Commission can proceed with permitting.

Questions or comments on the PA should be directed within 14 days from the date of this letter to the staff technician indicated below.

<u>Applicant</u>	<u>Technician</u>	<u>Permit No.</u>	<u>EPA I.D. No.</u>
The Lubrizol Corporation	Wayne Harry	HW-50077	TXD 041067638

Sincerely,

Minor Beards Nibbs for
Ann N. McGinley, Director
Special Program (RCRA)
Hazardous and Solid Waste Division

WRH:bb
Enclosure
cc: TWC Southeast Regional Office - Deer Park

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : The Files

DATE:

THRU :

FROM : Wayne R. Harry, H&SW Permits Section

SUBJECT: The Lubrizol Corporation - Deer Park Facility
Solid Waste Registration No. 30324 - Preliminary Assessment

EXECUTIVE SUMMARY

The Lubrizol Corporation operates an interim status hazardous waste management facility associated with their chemical production plant in Deer Park, Texas. The hazardous waste management units consist of nineteen tanks, one container storage area, and two surface impoundments.

Operation of the two surface impoundments has resulted in discharge of low concentrations of several Appendix VIII materials to shallow area ground water. Lubrizol has submitted a Ground-Water Quality Assessment Plan for the two impoundments to the Texas Water Commission. Lubrizol has also submitted a Ground-water Compliance Plan pursuant to the Agreed Final Judgement between the State of Texas vs. The Lubrizol Corporation, Cause No. 85-57130. The closure plan for one of the impoundments has been approved and the closure plan for the other impoundment is under review.

Insufficient information is available to allow evaluation of several waste management units. A site investigation is suggested for the following units to determine whether these units have released waste to the environment.

<u>N.O.R.</u>	<u>SWMU</u>	<u>Status</u>
22	Bulk Storage Area	Active
23	Bulk Storage Area	Active
24	Bulk Storage Area	Active
1	Concrete Storage Tank (below-grade)	Inactive
	(New) Lift Station No. 1	Active
	Lift Station No. 2	Active
	Surface Impoundment (Aeration Lagoon)	Active
	Surface Impoundment	Inactive
	Waste Piles	Inactive
	Tank T3X (below-grade)	Active
	Tank T4X (below-grade)	Active
	Tank T5A (below-grade)	Active
	Tank T5B (below-grade)	Active
	Tank T7A (below-grade)	Active
	Tank T7B (below-grade)	Active
	Tank T1A	Active
	Tank T1B	Active
	Tank E1	Active
	Tank E2	Active
	Tank E4	Active

PRELIMINARY ASSESSMENT FACILITY CHECKLIST

Facility: The Lubrizol Corporation
EPA ID #: TXD 041067638
Reg. No.: 30324
HAZSIT #: TX 00876

Reviewer: Wayne R. Harry
Section: TWC Permits
Date:

A. Waste Management Units:

1. RCRA Regulated Units

See Attachment I

2. Solid Waste Management Units

See Attachment II

B. Reviewed Documents:

1. RCRA: Part A x Part B x Permit

2. CERCLA: *Notification none date

Mitre Model date HRS

Remedial Investigation date

Feasibility Study date

Record of Decision date

3. Inspection Reports:

Site Investigations: URM, November 8, 1984
TWC, September 20, 1985
TWC, October 16, 1984
TWC, July 25, 1984

4. Enforcement Actions:

TWC, January 6, 1986 - Agreed Final Judgement, State of Texas vs.
The Lubrizol Corporation, Cause No. 85-57130.

5. Exposure Information: Hazardous Waste Permit Application
Addendum for TACB (Attachment V)

6. Other Information:

Notice of Registration (N.O.R.) from TWC

*Tentative Decision 4/12/83

Site Inspection 2/10/84 Result: "Low Hazard Assessment"

C. Summary:

The Lubrizol Corporation operates an interim status hazardous waste management facility associated with their chemical production plant in Deer Park, Texas. The hazardous waste management units consist of nineteen tanks, one container storage area, and two surface impoundments.

Operation of the two surface impoundments has resulted in discharge of low concentrations of several Appendix VIII materials to shallow area ground water. Lubrizol has submitted a Ground-Water Quality Assessment Plan for the two impoundments to the Texas Water Commission. Lubrizol has also submitted a Ground-water Compliance Plan pursuant to the Agreed Final Judgement between the State of Texas vs. The Lubrizol Corporation, Cause No. 85-57130. The closure plan for one of the impoundments has been approved and the closure plan for the other impoundment is under review.

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<u>N.O.R.</u>	<u>SWMU</u>	<u>Status</u>
22	Bulk Storage Area	Active
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	Lift Station No. 2	Active
	Surface Impoundment (Aeration Lagoon)	Active
	Surface Impoundment	Inactive
	Waste Piles	Inactive
	Tank T3X (below-grade)	Active
	Tank T4X (below-grade)	Active
	Tank T5A (below-grade)	Active
	Tank T5B (below-grade)	Active
	Tank T7A (below-grade)	Active
	Tank T7B (below-grade)	Active
	Tank T1A	Active
	Tank T1B	Active
	Tank E1	Active
	Tank E2	Active
	Tank E4	Active

D. Recommended Actions:

1. No Further Action _____
2. Site Investigation x
3. Remedial Investigation _____
4. Corrective Action _____
5. Referral for Health Assessment _____

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 01 SWMU Inactive

Type: Below-grade concrete storage tank

Reinforced concrete box with a capacity of 815 yd³; currently being closed.

II. Evidence of Release:

The company has sampled the sub-surface soils as part of closure for this unit. Significant concentrations of barium, chromium, and TOC were detected. No background values were supplied.

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Filter cake and miscellaneous Class II waste containing small amounts of Appendix VIII constituents, phenol, M.E.K., maleic anhydride, barium compounds, toluene, CS₂, chromium compounds.

Quantity: 815 yd³

Fate and Toxicity: See Attachment IV.

V. Target Populations of Concern:

See Attachment III.

VI. Documents Reviewed:

See Attachment III. Also, correspondence dated 8/1/85, 8/29/85, 10/3/85 and 2/4/86.

VII. Site Description:

Unit is located in the NW corner of the facility. It consists of a below-grade open-top reinforced concrete tank.

VIII. Summary:

Available information suggests a possible release to the sub-surface soil may have occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 02 SWMU Active

Type: Bulk Storage Area (3) 40 cu. yd. steel bins

II. Evidence of Release:

No evidence of release

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II Plant refuse, general miscellaneous waste

Quantity: 120 cu. yds. total

Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III.

VII. Site Description:

These units are located in the northwest portion of the plant. Wastes are routinely removed for off-site disposal.

VIII. Summary:

Available information does not indicate past releases from these units. Future releases are not anticipated provided the units are maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 03 SWMU Active

Type: Tank (above-grade) Lubrizol ID No. = 4849

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, clarifier sludge with trace organics

Quantity: unknown

Fate & Toxicity: unknown

V. Target Populations of Concern:

See Attachment III.

VI. Documents Reviewed:

See Attachment III.

VII. Site Description:

Located in the process area of the plant.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 04 RCRA Active

Type: Tank (above-grade) Lubrizol ID NO. = WO - 1

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, Waste Code 915490; Organic liquid & water; Appendix VIII
constituent - phenol

Quantity: 6,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the central portion of the plant site.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 05 SWMU Active

Type: Surface Tank - Above-grade steel tank
Lubrizol ID No. = WO - 3

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Organic liquid and water containing small amounts of App. VIII
const. - phenol
Quantity: 13,709 gal. max. cap.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the northwest portion of the plant site.

VIII. Summary:

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 06 SWMU Active

Type: Tank (above-grade) Lubrizol ID No. = WO - 5

II. Evidence of Release:

No evidence.

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490, Organic liquid and water with small amounts of Phenol

Quantity: 8,408 Gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 07 RCRA Active

Type: Tank (above-grade) Lubrizol ID No. = WO - 6

II. Evidence of Release:

See Permit Application Addendum for TACB (Attachment V)

III. Pollutant Dispersal Pathways:

See Attachment III.

Air: See also Attachment V

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; organic liquid and water with App. VIII
const. - phenol

Quantity: 8,400 gal. capacity

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, V

VII. Site Description:

Unit is located on the northwest portion of the plant site. See
Attachments VI and VII.

VIII. Summary

Tank WO-6 is included as part of the draft H&SW permit for this facility.
Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good
functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 08 SWMU Active

Type: Tank (above-grade) Lubrizol ID No. = T-19P

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

Air: See also Attachment V

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 10,000 gal. capacity

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 09 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-19W

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 4,500 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 10 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-19X

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 10,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 11 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-19Y

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

2

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 12,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 12 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-20X

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 16,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 13 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = T-23X

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 12,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located on the northwest portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 14 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = CA-1

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IV, Waste Code #908260; scrubber water, sodium sulfite solution

Quantity: 18,000 gal.

Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the north central portion of the plant site. See Attachments VI and VIII.

VIII. Summary

Unit will be part of a draft H&SW permit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 15 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = J-42

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IH, Waste Code #908260; scrubber water, sodium sulfite solution

Quantity: 10,000 gal. cap.

Fate & Toxicity: No data

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

See Attachments VI and IX

VIII. Summary

Unit will be part of a draft H&SW permit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 16 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = H-6

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class I, Waste Code #115490; Organic liquid and water with App. VIII
const. - phenol

Quantity: 12,126 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Unit is located in the central portion of the plant site. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 17 RCRA Inactive

Type: Storage Tank (above-grade tank car shell)
Currently undergoing closure

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III.

IV. Waste Characteristics:

Type: Class IH, Waste Code #915490; Organic liquid and water, process
wastewaters

Quantity: 5,500 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. The unit is a horizontal, carbon steel tank. No design specifications are available.

VIII. Summary

Unit #17 is inactive and is currently undergoing closure. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 18 RCRA Active

Type: Storage Tank (above-grade) Lubrizol ID No. = B-32

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

Air: See also Attachment V

IV. Waste Characteristics:

Type: Class IH, Waste Codes 913860, 910590, 915530; non-halogenated solvents, misc. organic lab waste, crankcase oil; App. VIII. Const. - phenol, MEK, toluene

Quantity: 15,106 gal. cap.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III, V

VII. Site Description:

Located in process area. See Attachments VI, X, and XI

VIII. Summary

Unit will be part of a draft H&SW permit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 19 SWMU Active

Type: Bulk Storage Area (enclosed) (3) 30 cu. yd. steel bins

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, Waste Code #249950, biological sludge, domestic sewer sludge containing small amounts of barium and chromium

Quantity: 90 cu. yd. total

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary

Available information does not indicate past releases from these units. Future releases are not anticipated provided the units are maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 20 RCRA Active

Type: Drum Storage Area (less than 90 days)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class IH, Waste Code #981690, 914990, 914250, 911080, 913640, 910030, 970490, carbon disulfide, N-butyl alcohol, isobutyl alcohol, methanol, phenol xylene/xylol, contaminated soil

Quantity: Unknown

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 21 SWMU Active

Type: Container storage (7) roll-off boxes

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Diatomaceous earth filter media with oil, plastic, and dirt, biological sludge from domestic sewer system, and sulfur waste; with small amounts of App. VIII constituents -- phenol, MEK, maleic anhydride, barium and compounds, chromium and compounds, CS₂, toluene. Class II, Waste Code #270640, 249950, 270240

Quantity: 210 cu. yd. max. cap.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary

Available information does not indicate past releases from these units. Future releases are not anticipated provided the units are maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 22 SWMU Active

Type: Bulk storage area

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, Waste Code #270640, 249950, 270240; diatomaceous earth filter media with oil, plastic, and dirt, biological sludge, domestic sewer sludge, sulfur waste scrap, with small amounts of Appendix VIII constituents -- phenol, methyl ethyl ketone (MEK), maleic anhydride, barium and compounds, chromium and compounds, carbon disulfide, toluene

Quantity: Unknown

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area.

VIII. Summary

More information is needed to properly evaluate this unit.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 23 SWMU Active

Type: Bulk storage area

II. Evidence of Release:

*

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area.

VIII. Summary

More information is needed to properly evaluate this unit.

IX. Recommended Actions:

Site investigation.

* See N.O.R. Facility #22 Bulk Storage Area

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 24 SWMU Active

Type: Bulk storage area

II. Evidence of Release:

*

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area.

VIII. Summary

More information is needed to properly evaluate this unit.

IX. Recommended Actions:

Site investigation.

* See N.O.R. Facility #22

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 25 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = RA-3

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, Waste Code #115490, Organic liquid and water with Appendix VIII constituent -- phenol

Quantity: 16,521 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.

Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 26 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = WO-4

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, Waste Code #115490, Organic liquid and water with Appendix VIII constituent -- phenol

Quantity: Unknown

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: 27 SWMU Active

Type: Storage Tank (above-grade) Lubrizol ID No. = H-73

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class I, Waste Code #115940, Organic liquid and water with Appendix VIII constituent -- phenol

Quantity: Unknown

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Inactive

Type: Lift Station No. 1 (Inactive)
Wastewater treatment lift station

II. Evidence of Release:

Currently undergoing ground-water assessment and closure

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene
Quantity: 45,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III and letter to TWC from Lubrizol dated November 15, 1985 re: Ground-water Assessment Plan for No. 1 Lift Station; also Part B revisions, Section VIII (Sept. 17, 1985)

VII. Site Description:

The No. 1 Lift Station (inactive) is located on the northwest corner of the Lubrizol Deer Park facility. This unit consists of an earthen bottom and steel sides.

VIII. Summary

The No. 1 Lift Station is currently inactive and is undergoing closure. Ground-water assessment is being undertaken and corrective action will follow, if necessary, pursuant to the Agreed Final Judgment, Cause No. 85-57130, State of Texas vs. The Lubrizol Corporation.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Inactive

Type: Surface Impoundment
Wastewater Treatment Equalization Lagoon

II. Evidence of Release:

Sampling data from downgradient wells indicate levels of TOC and phenols above background.

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene
Quantity: 1,390,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Letter to TDWR (TWC) from Lubrizol dated December 28, 1984 re: Closure of Equalization Basin

VII. Site Description:

The equalization basin is located on the southwest portion of the Lubrizol-Deer Park facility. No detailed construction plans are available. The unit is approximately 125' x 175' across.

VIII. Summary

The equalization basin is presently inactive and is to be closed. Concentrations of TOC, TOH, and Phenol, higher than background, have been found in monitoring wells downgradient from the equalization basin.

A ground-water assessment plan has been submitted and corrective action will be taken pursuant to Agreed Final Judgment, Cause No. 85-57130, State of Texas vs. The Lubrizol Corp.

IX. Recommended Actions:

No further action.

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Lean Oleum Storage Tank (above-grade)
Lubrizol ID # J-52

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Lean Oleum (Spent sulfuric acid)
Quantity: 10,239 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit.
Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Lift Station No. 1 (active) (below-grade)
Wastewater Treatment Lift Station

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene

Quantity: 84,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Lift Station No. 2
Wastewater Treatment Lift Station (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene

Quantity: 42,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment API Separator
Lubrizol ID # Tank T-1A

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene
Quantity: 21,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information is insufficient to determine if a release has occurred from this unit. A site investigation is recommended to determine if soil borings or ground-water monitoring should be performed.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment API Separator
Lubrizol ID # Tank T-1B

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information is insufficient to determine if a release has occurred from this unit. A site investigation is recommended to determine if soil borings or ground-water monitoring should be performed.

IX. Recommended Actions:

Site investigation.

* See Tank T-1A

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Coarse Neutralization
Lubrizol ID # Tank T3X (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone, barium compounds, chromium compounds, toluene

Quantity: 7,500 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Fine Neutralization
Lubrizol ID # Tank T4X (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

*

IV. Waste Characteristics:

*

V. Target Populations of Concern:

*

VI. Documents Reviewed:

*

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

See Tank T3X (subsurface)

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Flocculation
Lubrizol ID # Tank T22X (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: See Tank T3X (below-grade)
Quantity: 31,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Primary Clarification
Lubrizol ID # Tank T5A (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: See Tank T3X (subsurface)
Quantity: 118,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Primary Clarification
Lubrizol ID # Tank T-5B (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: See Tank T3X (below-grade)
Quantity: 118,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in process area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Surface Impoundment
Wastewater Treatment Aeration Lagoon

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters containing low concentrations of phenol, methyl ethyl ketone (MEK), barium compounds, chromium compounds, toluene
Quantity: 4,800,000 gal.
Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III; also letter from Lubrizol to TWC dated 11/14/85.

VII. Site Description:

Located in wastewater treatment area. Unit consists of concrete sides and a clay bottom.

VIII. Summary

Available information does not indicate past releases from this unit. As stated in the 11/14/85 letter sent to TWC, a ground-water sample was taken from the monitor well AE-2 located downgradient of the surface impoundment. The analysis indicated low concentrations of a few Appendix VIII constituents. TOC was not measured.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Final Clarification
Lubrizol ID #Tank T7A (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters with low concentrations of chromium compounds,
barium compounds, toluene

Quantity: 176,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are available.

VIII. Summary

Available information does not indicate past releases from this unit. However, this information does not indicate whether site-specific sub-surface monitoring has been performed to determine whether a release has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Final Clarification
Lubrizol ID #Tank T7B (below-grade)

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Process wastewaters with low concentrations of chromium compounds
and barium compounds.

Quantity: 176,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are
available.

VIII. Summary

Available information does not indicate past releases from this unit.
However, this information does not indicate whether site-specific
sub-surface monitoring has been performed to determine whether a release
has occurred.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Tank for Stormwater surge.
Lubrizol ID #Tank E1

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wastewaters containing low concentrations of phenol, MEK, chromium compounds, barium compounds, toluene.

Quantity: 110,160 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are available.

VIII. Summary

Available information is insufficient to determine if a release has occurred from this unit. A site investigation is recommended to determine if soil borings or ground-water monitoring should be performed.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Tank for Stormwater surge.
Lubrizol ID #Tank E2

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

See Tank E1

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are available.

VIII. Summary

Available information is insufficient to determine if a release has occurred from this unit. A site investigation is recommended to determine if soil borings or ground-water monitoring should be performed.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Active

Type: Wastewater Treatment Tank for Stormwater surge.
Lubrizol ID #Tank E4

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

See Tank E1

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in wastewater treatment area. No design specifications are available.

VIII. Summary

Available information is insufficient to determine if a release has occurred from this unit. A site investigation is recommended to determine if soil borings or ground-water monitoring should be performed.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Inactive

Type: Surface Impoundment - Part of Plant's Original Wastewater Treatment System

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wastewaters with low concentrations of barium compounds, chromium compounds, phenol, methyl ethyl ketone, toluene.

Quantity: 1,000,000 gal.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Northwest portion of the plant.

VIII. Summary

This surface impoundment is a pre-RCRA unit. It is reported as being inactive since 1970. Available information is inadequate to determine the type of waste contained in the unit and if the unit has been properly closed.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None SWMU Inactive

Type: Waste Piles

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Class II, Waste Code #270640 Misc. Class II wastes which contain Appendix VIII constituents -- Phenol, methyl ethyl ketone, toluene, maleic anhydride, barium compounds, carbon disulfide

Quantity: 1,000 cu. yd.

Fate & Toxicity: See Attachment IV

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III

VII. Site Description:

Located in northwest portion of the plant.

VIII. Summary

These waste piles are pre-RCRA and are reported as being inactive since 1965. Available information is inadequate to determine the type of waste contained in the unit and if the unit has been properly closed.

IX. Recommended Actions:

Site investigation.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Short-term tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-5

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 979 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Short-term tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-6

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 979 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Short-term tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-22

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 2064 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the units is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Short-term tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank C-26

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 3075 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Storage tank for wet heavy alcohol (above-grade)
Lubrizol ID # Tank M-26

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 26,328 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Storage tank for wet heavy alcohol (above-grade)
Lubrizol ID # Tank M-28

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 26,328 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Long-term storage tank for wet heavy alcohols (above-grade)
Lubrizol ID # Tank M-29

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 88,128 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Long-term storage tank for wet heavy alcohols (above-grade)
Lubrizol ID # Tank M-29

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 88,128 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Long-term storage tank for wet heavy alcohol (above-grade_
Lubrizol ID # Tank C-31

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 88,128 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Short-term storage tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank L-6

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet mixed alcohols
Quantity: 2890 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA Active

Type: Short-term storage tank for wet mixed alcohols (above-grade)
Lubrizol ID # Tank K-1

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Wet heavy alcohols
Quantity: 5871 gal.
Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

Revised Part A by letter dated July 3, 1985. Also, Attachment III.

VII. Site Description:

See Attachment VI for location. No design specifications are available.

VIII. Summary

TWC is reviewing this unit to determine if it is subject to regulation as a solid waste management unit. Available information does not indicate past releases from this unit. Future releases are not anticipated provided the unit is maintained in good functional condition.

IX. Recommended Actions:

No further action.

PRELIMINARY ASSESSMENT UNIT CHECKLIST

I. Waste Management Unit:

N.O.R. Facility No.: None RCRA inactive

Type: Below-grade steel solvent storage tank; currently undergoing closure.

II. Evidence of Release:

No evidence

III. Pollutant Dispersal Pathways:

See Attachment III

IV. Waste Characteristics:

Type: Reclaimed solvents

Quantity: 568 gallons

Fate & Toxicity: Unknown

V. Target Populations of Concern:

See Attachment III

VI. Documents Reviewed:

See Attachment III. Also, correspondence dated 7/23/84, 9/5/84, 2/1/85, 12/13/85.

VII. Site Description:

Steel tank, 4'0" diameter, for the storage of lab solvents. No design specifications are available.

VIII. Summary

The closure plan has been approved for this unit. Available information does not indicate past releases from this unit. Future soil samples, as part of the approved closure plan, will determine whether a release has occurred to the sub-soil.

IX. Recommended Actions:

No further action.

Attachment I

<u>RCRA Regulated Units</u>	<u>Status</u>
Tank WO-1	Active
Tank WO-6	Active
Tank CA-1	Active
Tank J-42	Active
Tank T-23X	Active
Tank Car Shell	Inactive
Tank B-32	Active
Drum Storage Area less 90 days	Active
Lift Station No. 1	Inactive
Equalization Lagoon	Inactive
Tank J-52	Active
Tank C-5	Active
Tank C-6	Active
Tank C-22	Active
Tank C-26	Active
Tank M-26	Active
Tank M-28	Active
Tank M-29	Active
Tank M-31	Active
Tank L-6	Active
Tank K-1	Active
Below-grade Storage Tank (steel)	Inactive

Attachment II

<u>SWMU</u>	<u>Status</u>	<u>SWMU</u>	<u>Status</u>
Below-grade Storage Tank (concrete box)	Inactive	Wastewater Aeration Lagoon	Active
Bulk Storage Area	Active		
Tank 4849	Active	Below-grade Tank T-7A	Active
Tank WO-3	Active	Below-grade Tank T-7B	Active
Tank WO-5	Active	Tank E-1	Active
Tank T-19P	Active	Tank E-2	Active
Tank T-19W	Active	Tank E-4	Active
Tank T-19X	Active	Surface Impoundment	Inactive
Tank T-19Y	Active	Waste Pile	Inactive
Tank T-20X	Active		
Tank H-6	Active		
Bulk Storage Area	Active		
Container Storage	Active		
Bulk Storage Area	Active		
Bulk Storage Area	Active		
Bulk Storage Area	Active		
Tank RA-3	Active		
Tank WO-4	Active		
(New) Lift Station No. 1	Active		
Tank T-1A	Active		
Tank T-1B	Active		
Below-grade Tank T-3X	Active		
Below-grade Tank T-4X	Active		
Below-grade Tank T-22X	Active		
Below-grade Tank T-5A	Active		
Below-grade Tank T-5B	Active		

DISPERSION ANALYSIS
OF
ATMOSPHERIC EMISSIONS
FROM
STORAGE TANKS

D997-000

January 1986

Prepared for:

The Lubrizol Corporation

Prepared by:

ENVIRONMENTAL RESEARCH & TECHNOLOGY, INC.
12012 Wickchester, Suite 200
Houston, Texas 77079

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PREFACE

This is to certify that the atmospheric dispersion modeling described herein was performed in accordance with the established procedures and techniques of the Texas Air Control Board.

1.0 INTRODUCTION

The Lubrizol Corporation submitted an RCRA Part B permit application to the Texas Water Commission (TWC). On October 1, 1985, TWC requested information regarding atmospheric emissions from each applicant. Environmental Research and Technology, Inc. (ERT) was retained to respond to Item 12, an analysis of 30-minute and annual-average concentrations of potentially toxic air pollutants. This facility will permit small amounts of volatile organic compounds (VOCs) into the atmosphere, some of which may have potentially harmful effects to humans. Specifically, two VOC constituents were identified as potentially toxic; they are methylethylketone (MEK) and toluene. There are no other hazardous components.

The remainder of this report is divided into four additional sections. Section 2 describes the storage tank locations and their pollutant emissions. Section 3 addresses the standards for the emissions based on health effects that must be attained. Section 4 provides the methodology of the impact analysis, and Section 5 summarizes the analytical sections (Sections 2, 3 and 4) and presents conclusions gathered from the analysis. Attachments 1 through 4 are included in support of the impact analysis.

2.0 THE FACILITY AND ATMOSPHERIC VOC EMISSIONS

The facility is located in a heavily industrialized area between the Houston Ship Channel and Highway 225, northeast of Deer Park, Texas. The emissions of concern are generated from two storage tanks and accompanying fugitive emissions from valves, flanges and connections.

The specific compounds of VOC emissions for which published threshold limit values (TLVs) exist are methylethylketone and toluene. Annual storage tank emissions were supplied by Lubrizol and were based on AP-42 breathing and working losses. Attachment 1 provides detailed calculations. Fugitive losses, also supplied by Lubrizol, were calculated based on emission factors from an Environmental Protection Agency document (EPA-450/3-82-010) and the number of valves, flanges, open-ended lines, and sampling connections. A summary of total annual VOC emission rates are:

<u>Storage Tank No.</u>	<u>Total VOC Tank Emission Rate (lb/year)</u>	<u>Total VOC Fugitive Emission Rate (lb/year)</u>
B-32	56.6	3,979
WO-6	96.9	845

Based on proportions of 73% MEK and 27% toluene, the following annual-average emission rates result:

<u>Compound</u>	<u>Storage Tank No.</u>	<u>Tank Emission Rate (lb/year) (g/sec)</u>		<u>Fugitive Emission Rate (lb/year) (g/sec)</u>	
MEK	WO-6	70.7	0.0010175	47	0.000676
Toluene	WO-6	26.2	0.0003763	47	0.000676
MEK	B-32	41.3	0.005943	221	0.003179
Toluene	B-32	15.3	0.0002198	221	0.003179

For the maximum one-time (or short-term) emission rate, a "worst case" scenario was developed that assumes a tank truck unloads 5,000 gallons of waste to WO-6 or B-32 at 200 gallons per minute. Assuming this occurs at B-32 during the unloading, the following B-32 tank emission rate is calculated as: $2.15 \text{ lb/hr} = 0.2709 \text{ g/sec}$ of MEK and $0.8 \text{ lb/hr} = 0.1008 \text{ g/sec}$ of toluene. Emission rates for all the fugitive and the WO-6 tank were assumed to be the same as in the annual-average cases.

3.0 HEALTH EFFECTS OR IMPACT LIMITATIONS

The Texas Air Control Board (TACB) is concerned with releases of potentially toxic chemicals into the air and has developed a screening method for determining impact levels below which health effects are considered inconsequential. This screening guideline states that a given compound will have insignificant health effects if the maximum off-site, long-term (annual-average) and short-term (30-minute average) concentrations are below one one-thousandth and one one-hundredth of the compound's TLV respectively. Simply stated, a compound's atmospheric impact is considered to have no potential health effects if its longand short-term maximum concentrations are respectively less than 0.1% and 1.0% of its TLV and if further analysis is not required.

In this analysis, there are two compounds for which TLVs are established. These and the subsequent longand short-term standards are as follows:

<u>Compound</u>	<u>TLV (ppb)</u>	<u>Short-term Standard (ppb)</u>	<u>Long-term Standard (ppb)</u>
MEK	200,000	2,000	200
Toluene	100,000	1,000	100

4.0 IMPACT ANALYSIS METHODOLOGY

The purpose of the impact analysis is to estimate maximum long-term and "worst case" short-term ground-level pollutant concentrations produced by the storage tanks and attendant facility. These VOC concentration estimates consist of expected annual-average values as well as 30-minute maximum values.

Two computerized atmospheric dispersion models were used to calculate the concentration estimates. Specifically, the Texas Climatological Model Version 2 (TCM-2) was used to calculate annual-average concentrations, and the sequential Texas Episodic Model Version 8 (TEM-8) was used to calculate short-term concentrations. The models were run in the urban mode.

Table 1 provides the stack parameters for both the longand short-term analyses. As the fugitive sources will be released at ambient temperatures and with no exit velocity, the sources were modeled with no plume rise and released at approximately 10 feet (3 meters) at tanks B-32 and WO-6 locations .

Both tanks are within the aerodynamic wake influence of a large cooling tower having dimensions of 60 feet by 41 feet. The models were therefore used with the Huber-Snyder downwash algorithm. An equivalent diameter of 56 feet was calculated (17 meters) to simulate H_w . The height of the structure is 53 feet (16 meters) and was used to simulate H_B .

4.1 Long-Term Analysis

The TCM-2 was used to predict annual concentrations of MEK and toluene. The meteorological data used were from data collected at the Houston Hobby Airport during a 9-year period from 1961 to 1969. This represents a day-night star program (joint frequency distribution); see

TABLE 1

STACK PARAMETERS

	<u>Tank B-32</u>	<u>Tank WO-6</u>	<u>Fugitive</u>
UTM Coordinates*			
Easterling (km)	295.34	295.35	same as tanks
Northerling (km)	3,289.39	3,289.43	same as tanks
Height (m)	7.62	5.79	3.0
Diameter (m)	0.01	0.01	0.01
Velocity (m/sec)	0.01	0.01	0.01
Temperature (°C)	21°C	21°C	21°C

* Zone 15

Attachment 2. Since the sources are all low-level releases with no plume rise, a very fine grid spacing of 20 meters with the sources in the center of a 25 by 25 foot grid was chosen for the modeling.

Annual emission rates provided in Section 2 were utilized in the analyses. Model output printout is included in Attachment 3.

4.2 Short-Term Analysis

The TEM-8 Model was used to predict 30-minute maximum concentrations of MEK and toluene. The surface data was gathered at Hobby Field in Houston, Texas, with upper air data from Lake Charles, Louisiana. For the sake of brevity, these hourly data are not presented herein.

The reported wind directions (i.e., in 10 degree sectors) were used with calm wind speed conditions skipped. The same receptor grid was used as for the long-term modeling. Model output printout is included in Attachment 4.

5.0 RESULTS AND CONCLUSIONS

5.1 Long-Term

The maximum annual predicted concentrations for MEK and toluene are as follows:

Pollutant	UTM Coordinates		Maximum Concentration		Guideline
	X(km)	Y(km)	($\mu\text{g}/\text{m}^3$)	(ppb)	Limitation (ppb)
MEK	295.32	3,289.44	1.0	0.3	200.0
Toluene	295.32	3,289.44	0.9	0.2	100.0

The location of the maximum for both MEK and toluene are both "on-site"; diminished concentrations occur "off-property". As indicated, the maximum predicted concentrations are several orders of magnitude less than the impact standard. No adverse health impacts are indicated.

5.2 Short-Term

The maximum 30-minute concentrations for MEK and toluene are as follows:

<u>Pollutant</u>	<u>UTM Coordinates</u>		<u>Maximum Concentration</u>		<u>Guideline</u>
	<u>X(km)</u>	<u>Y(km)</u>	<u>($\mu\text{g}/\text{m}^3$)</u>	<u>(ppb)</u>	<u>Limitation</u> <u>(ppb)</u>
MEK	295.34	3,289.34	719.8	240.0	2,000.0
Toluene	295.34	3,289.34	281.3	73.4	1,000.0

As in the long-term analysis, these maximum impact locations occur on-site with lesser impacts off-site. However, even these maximum on-site values are very small in comparison with the guideline limits.

In general, it is obvious that this facility's atmospheric impact is very small in comparison with the TACB health effect review criteria.

ATTACHMENT 1

**Supporting Calculations
and
Emission Estimates**

TANK WO-6

$$\text{Tank } Q_{\text{MEK}} \rightarrow 96.9 \text{ lb/yr}^* \times .73 \text{ (proportion of MEK)} \\ = 70.74 \text{ lb/yr} \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.008075 \text{ lb/hr}$$

$$0.008075 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/lb}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0010175 \text{ gm/sec}}$$

$$\text{Tank } Q_{\text{Toluene}} \rightarrow 96.9 \text{ lb/yr}^* \times .27 \text{ (proportion of Toluene)} \\ = 26.163 \text{ lb/yr} \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.002987 \text{ lb/hr}$$

$$0.002987 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/lb}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0003763 \text{ gm/sec}}$$

$$\text{Fugitive } Q_{\text{MEK+Toluene}} \rightarrow 94.0 \text{ lb/yr}^* \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) \\ = 0.010731 \text{ lb/hr}$$

$$0.010731 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/lb}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.001352 \text{ gm/sec}}$$

* - Data supplied by Lubrizol Corporation

TANK B-32

$$\text{Tank } Q_{\text{MEK}} \rightarrow 56.6 \text{ lb/hr}^* \times .73 = 41.318 \text{ lb/yr}$$

$$\times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.004717 \text{ lb/hr}$$

$$0.004717 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0005943 \text{ gm/sec}}$$

$$\text{Tank } Q_{\text{Toluene}} \rightarrow 56.6 \text{ lb/hr}^* \times .27 = 15.282 \text{ lb/yr}$$

$$15.282 \text{ lb/yr} \times \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) = 0.001745 \text{ lb/hr}$$

$$0.001745 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.0002198 \text{ gm/sec}}$$

$$\text{Fugitive } Q_{\text{MEK \& Toluene}} \rightarrow 442 \text{ lb/yr}^* \left(\frac{1 \text{ yr}}{8760 \text{ hr}} \right) =$$

$$0.050457 \text{ lb/hr}$$

$$0.050457 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{1 \text{ lb/hr}} \right) =$$

$$\boxed{0.006358 \text{ gm/sec}}$$

* - Data supplied by Lubrizol Corporation

As supplied by Lubrizol, assume tanker truck unloads 5000 gal max of waste at B-32 at 200 gals/min. This is 670 ft³/25 minutes.

$$\text{Thus, } Q_{\text{MEK}} \rightarrow (0.043 \text{ lb/min})^* (25 \text{ min}) =$$

1,075 total lbs for unloading

$$1,075 \text{ lb} / 30 \text{ min} = 0.035833 \text{ lb/min}$$

$$\times \left(\frac{60 \text{ min}}{\text{hr}} \right) = 2.15 \text{ lb/hr}$$

$$2.15 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{\text{lb/hr}} \right) = \boxed{0.2709 \text{ gm/sec}}$$

$$\text{And, } Q_{\text{Toluene}} \rightarrow (0.016 \text{ lb/min})^* 25 \text{ min} =$$

$$0.4 \text{ lbs} / 30 \text{ min} = 0.01333 \text{ lb/min}$$

$$\times \left(\frac{60 \text{ min}}{\text{hr}} \right) = 0.8 \text{ lb/hr}$$

$$0.8 \text{ lb/hr} \times \left(\frac{.126 \text{ gm/sec}}{\text{lb/hr}} \right) = \boxed{0.1008 \text{ gm/sec}}$$

Other emission rates for fugitives and tank WO-6 are SAME as long-term estimates

* Data supplied by Lubrizol Corporation

MEK - Methyl Ethyl Ketone

$$\text{ppb} = \frac{24.04}{72.10} \mu\text{g}/\text{m}^3$$

TLV is
200 ppm

$$\text{ppb} = 0.333426 \mu\text{g}/\text{m}^3$$

Toluene

$$\text{ppb} = \frac{24.04}{92.13} \mu\text{g}/\text{m}^3$$

TLV is 100 ppm

$$\text{ppb} = 0.260936 \mu\text{g}/\text{m}^3$$

ATTACHMENT 2

**Meteorological Data for
Long-Term Modeling Analysis**

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: ALL STABILITY CLASSES COMBINED

----- Percent of Total Occurences -----								
W/D	----- Wind Speed Class (knots) -----						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.866	1.776	2.329	2.194	.591	.062	7.818	N
NNE	.499	.960	1.232	1.000	.178	.024	3.893	NNE
NE	.764	1.728	1.832	.865	.081	.022	5.292	NE
ENE	.938	1.663	1.677	1.017	.119	.012	5.426	ENE
E	.955	1.612	1.825	1.394	.245	.038	6.069	E
ESE	1.155	2.076	2.422	2.010	.333	.040	8.036	ESE
SE	1.260	3.015	3.395	2.090	.377	.024	10.161	SE
SSE	1.366	3.220	4.369	5.005	1.164	.052	15.176	SSE
S	1.559	3.140	3.461	3.320	.800	.079	12.359	S
SSW	.568	1.422	1.397	.936	.202	.028	4.553	SSW
SW	.481	1.075	.943	.456	.055	.010	3.020	SW
WSW	.515	1.068	.625	.222	.026	.002	2.458	WSW
W	.699	1.165	.679	.275	.053	.010	2.881	W
WNW	.502	.943	.659	.447	.129	.038	2.718	WNW
NW	.588	.901	.861	.941	.372	.096	3.759	NW
NNW	.699	1.236	1.538	1.954	.808	.132	6.367	NNW
TOT	13.414	27.000	29.244	24.126	5.533	.669	99.986	TOT

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: EXTREMELY UNSTABLE - A -

----- Percent of Total Occurences -----

W/D	----- Wind Speed Class (knots) -----						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.009	.006	.000	.000	.000	.000	.015	N
NNE	.010	.018	.000	.000	.000	.000	.028	NNE
NE	.013	.020	.000	.000	.000	.000	.033	NE
ENE	.011	.024	.000	.000	.000	.000	.035	ENE
E	.023	.016	.000	.000	.000	.000	.039	E
ESE	.007	.010	.000	.000	.000	.000	.017	ESE
SE	.015	.024	.000	.000	.000	.000	.039	SE
SSE	.015	.028	.000	.000	.000	.000	.043	SSE
S	.033	.061	.000	.000	.000	.000	.094	S
SSW	.008	.049	.000	.000	.000	.000	.057	SSW
SW	.025	.043	.000	.000	.000	.000	.068	SW
WSW	.019	.045	.000	.000	.000	.000	.064	WSW
W	.006	.022	.000	.000	.000	.000	.028	W
WNW	.006	.020	.000	.000	.000	.000	.026	WNW
NW	.006	.022	.000	.000	.000	.000	.028	NW
NNW	.014	.012	.000	.000	.000	.000	.026	NNW
TOT	.220	.420	.000	.000	.000	.000	.640	TOT

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: UNSTABLE - B -

----- Percent of Total Occurences -----

W/D	----- Wind Speed Class (knots) -----						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.062	.126	.083	.000	.000	.000	.271	N
NNE	.055	.069	.071	.000	.000	.000	.195	NNE
NE	.093	.130	.087	.000	.000	.000	.310	NE
ENE	.095	.128	.087	.000	.000	.000	.310	ENE
E	.068	.115	.093	.000	.000	.000	.276	E
ESE	.075	.103	.138	.000	.000	.000	.316	ESE
SE	.074	.182	.134	.000	.000	.000	.390	SE
SSE	.081	.148	.184	.000	.000	.000	.413	SSE
S	.106	.194	.207	.000	.000	.000	.507	S
SSW	.050	.105	.140	.000	.000	.000	.295	SSW
SW	.066	.132	.128	.000	.000	.000	.326	SW
WSW	.049	.120	.079	.000	.000	.000	.248	WSW
W	.072	.126	.073	.000	.000	.000	.271	W
WNW	.054	.099	.061	.000	.000	.000	.214	WNW
NW	.060	.073	.047	.000	.000	.000	.180	NW
NNW	.061	.101	.057	.000	.000	.000	.219	NNW
TDT	1.121	1.951	1.669	.000	.000	.000	4.741	TDT

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: SLIGHTLY UNSTABLE - C -

----- Percent of Total Occurences -----

W/D	----- Wind Speed Class (knots) -----						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.034	.132	.290	.075	.010	.000	.541	N
NNE	.023	.103	.215	.038	.000	.000	.379	NNE
NE	.026	.174	.373	.057	.004	.000	.634	NE
ENE	.039	.164	.401	.043	.002	.000	.649	ENE
E	.022	.146	.470	.132	.004	.000	.774	E
ESE	.052	.120	.496	.128	.010	.000	.806	ESE
SE	.020	.162	.531	.113	.008	.000	.834	SE
SSE	.028	.172	.646	.261	.093	.002	1.202	SSE
S	.031	.217	.590	.249	.036	.004	1.127	S
SSW	.017	.128	.367	.126	.018	.000	.656	SSW
SW	.019	.122	.294	.065	.000	.002	.502	SW
WSW	.017	.109	.221	.028	.002	.000	.377	WSW
W	.027	.105	.217	.038	.004	.000	.391	W
WNW	.018	.089	.186	.038	.002	.000	.333	WNW
NW	.017	.111	.140	.030	.006	.000	.304	NW
NNW	.029	.099	.227	.043	.002	.002	.402	NNW
TOT	.419	2.153	5.664	1.464	.201	.010	9.911	TOT

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: NEUTRAL/Day - D/d -

----- Percent of Total Occurences -----

W/D	----- Wind Speed Class (knots) -----						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.019	.160	.417	.845	.269	.026	1.736	N
NNE	.014	.118	.265	.458	.097	.010	.962	NNE
NE	.019	.168	.367	.470	.036	.008	1.068	NE
ENE	.027	.201	.409	.573	.079	.002	1.291	ENE
E	.014	.154	.492	.855	.186	.022	1.723	E
ESE	.025	.174	.588	1.313	.274	.020	2.394	ESE
SE	.021	.209	.691	1.278	.304	.012	2.515	SE
SSE	.009	.178	.760	3.002	.879	.036	4.864	SSE
S	.021	.184	.658	2.113	.679	.069	3.724	S
SSW	.014	.095	.292	.624	.154	.028	1.207	SSW
SW	.010	.107	.223	.326	.045	.008	.719	SW
WSW	.003	.079	.130	.166	.020	.002	.400	WSW
W	.022	.107	.168	.211	.049	.008	.565	W
WNW	.010	.107	.144	.267	.099	.030	.657	WNW
NW	.022	.073	.182	.482	.255	.055	1.069	NW
NNW	.012	.113	.318	.906	.429	.083	1.861	NNW
TOT	.262	2.227	6.104	13.889	3.854	.419	26.755	TOT

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: NEUTRAL/Night - D/n

----- Percent of Total Occurences -----

W/D	Wind Speed Class (knots)						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.058	.201	.725	1.274	.312	.036	2.606	N
NNE	.072	.111	.432	.504	.081	.014	1.214	NNE
NE	.082	.221	.644	.338	.041	.014	1.340	NE
ENE	.120	.172	.608	.401	.038	.010	1.349	ENE
E	.103	.211	.638	.407	.055	.016	1.430	E
ESE	.097	.261	.841	.569	.049	.020	1.837	ESE
SE	.106	.278	1.218	.699	.065	.012	2.378	SE
SSE	.065	.259	1.491	1.742	.192	.014	3.763	SSE
S	.091	.229	.997	.958	.085	.006	2.366	S
SSW	.035	.091	.219	.186	.030	.000	.561	SSW
SW	.036	.081	.120	.065	.010	.000	.312	SW
WSW	.035	.055	.075	.028	.004	.000	.197	WSW
W	.044	.061	.083	.026	.000	.002	.216	W
WNW	.043	.093	.138	.142	.028	.008	.452	WNW
NW	.058	.085	.239	.429	.111	.041	.963	NW
NNW	.072	.113	.419	1.005	.377	.047	2.033	NNW
TOT	1.117	2.522	8.887	8.773	1.478	.240	23.017	TOT

WIND SPEED / DIRECTION FREQUENCY DISTRIBUTION BY STABILITY CLASS

Station: (12918) HOUSTON HOBBY AIRPORT, 1961-1969

Data Period: ANNUAL - (61/ 1-69/12)

Stability Class: ALL STABLE CONDITIONS COMBINED - E+F+G -

----- Percent of Total Occurences -----								
W/D	----- Wind Speed Class (knots) -----						TOTAL	W/D
	0-3	4-6	7-10	11-16	17-21	GT 21		
N	.684	1.151	.814	.000	.000	.000	2.649	N
NNE	.325	.541	.249	.000	.000	.000	1.115	NNE
NE	.531	1.015	.361	.000	.000	.000	1.907	NE
ENE	.646	.974	.172	.000	.000	.000	1.792	ENE
E	.725	.970	.132	.000	.000	.000	1.827	E
ESE	.899	1.408	.359	.000	.000	.000	2.666	ESE
SE	1.024	2.160	.821	.000	.000	.000	4.005	SE
SSE	1.168	2.435	1.288	.000	.000	.000	4.891	SSE
S	1.277	2.255	1.009	.000	.000	.000	4.541	S
SSW	.444	.954	.379	.000	.000	.000	1.777	SSW
SW	.325	.590	.178	.000	.000	.000	1.093	SW
WSW	.392	.660	.120	.000	.000	.000	1.172	WSW
W	.528	.744	.138	.000	.000	.000	1.410	W
WNW	.371	.535	.130	.000	.000	.000	1.036	WNW
NW	.425	.537	.253	.000	.000	.000	1.215	NW
NNW	.511	.798	.517	.000	.000	.000	1.826	NNW
TOT	10.275	17.727	6.920	.000	.000	.000	34.922	TOT

ATTACHMENT 3

**Long-Term (Annual-Average)
Computer Results**

LUBRIZOL CORP. - 900-12 - MEK & Toluene Impact - 20 Meter Grid

1 RUN(S) WITH BOTH THE FIRST AND SECOND POLLUTANTS AND INTNUM = 1
 RISING STAGE OF PLUME RISE WILL BE USED
 URBAN DISPERSION WILL BE USED FOR POINT SOURCES

ARRAY MAP

DECAY HALF-LIFE OF POLLUTANT 1 = 999.900 HOURS.

RUN NO.	MEAN TEMPERATURE (deg K)	AREA SOURCE EMISSION SCALING FACTORS		----- CONCENTRATION CALIBRATION FACTORS -----			
		Pol. 1	Pol. 2	Pollutant 1		Pollutant 2	
				A(1)	B(1)	A(2)	B(2)
1	294.15	1.0000	1.0000	.0000	333.4260	.0000	260.9360

TACH

[illegible]

TEXAS CLIMATOLOGICAL MODEL - VERSION - 2

POINT SOURCE LIST: LUBRIZOL CORP. - 900-12 - MEK & Toluene Impact - 20 Meter Grid

RUN 1

SOURCE NUMBER	COORDINATES (m)		HEIGHT (m)	DIAM. (m)	VELOCITY (m/s)	TEMP. (deg K)	EMISSION RATES (g/s)		BUILDING DI. (m)		SOURCE ID
	E-W (X)	N-S (Y)					Pol. 1	Pol. 2	Hgt.	Width	
1	295.340	3289.390	7.62	.010	.010	294.15	.0006	.0002	16.0	17.0	TNK B-32
2	295.340	3289.390	3.00	.010	.010	294.15	.0064	.0064	16.0	17.0	FUG B-32
3	295.350	3289.430	5.79	.010	.010	294.15	.0010	.0004	16.0	17.0	TNK WD-6
4	295.350	3289.430	3.00	.010	.010	294.15	.0014	.0014	16.0	17.0	FUG WD-6

The Sum of the Point Source Emission Rates for this Run is: .01 g/s for Pollutant 1, and .01 g/s for Pollutant 2

The Sum of the Area Source Emission Rates for this Run is: .00 g/s for Pollutant 1, and .00 g/s for Pollutant 2

SECTION 1 OF 1 RUN NUMBER 1, POLLUTANT 1 (MEK) ,CALIBRATED CONCENTRATIONS (Concentrations in ppt) TCM-2 URBAN
LUBRIZOL CORP. - 900-12 - MEK & toluene Impact - 20 Meter Grid

METEOROLOGY: HOUSTON HOBBY AIRPORT, 1961-1969 5 1 (A,B,C,Dd,Dn,E+F) TACB

	295.10	295.14	295.18	295.22	295.26	295.30	295.34	295.38	295.42	295.46	295.50	295.54	295.58													
3289.64	27	28	30	31	42	44	50	52	54	56	51	49	50	49	49	18	18	17	16	16	13	9	9	8	8	3289.64
3289.62	28	30	32	34	36	48	50	57	60	62	57	55	55	55	54	26	19	19	18	15	10	10	9	9	8	3289.62
3289.60	30	32	34	36	38	52	55	63	66	69	64	62	62	62	61	23	22	21	20	17	11	11	10	9	9	3289.60
3289.58	29	31	36	38	41	44	60	64	74	77	80	73	71	70	26	25	24	23	19	13	12	11	11	10	9	3289.58
3289.56	31	33	35	41	44	48	52	71	75	87	92	86	83	83	31	29	28	23	16	15	13	12	11	10	9	3289.56
3289.54	26	35	38	41	45	52	57	79	86	101	107	102	99	98	36	35	32	26	18	16	15	13	12	11	9	3289.54
3289.52	27	29	32	44	48	53	62	69	97	109	132	129	126	125	45	41	33	22	20	18	15	14	12	10	10	3289.52
3289.50	28	30	33	37	51	57	64	72	91	133	151	168	167	164	58	46	30	26	21	19	16	14	12	11	10	3289.50
3289.48	29	32	35	39	44	49	70	83	100	164	194	250	250	89	78	57	36	29	24	19	16	14	13	11	10	3289.48
3289.46	28	30	34	38	43	52	62	95	118	148	238	214	193	71	62	53	42	33	24	20	17	16	14	12	11	3289.46
3289.44	28	31	35	39	45	52	64	80	102	170	244	318	300	105	57	66	47	35	28	22	19	16	14	13	11	3289.44
3289.42	23	25	28	32	37	54	67	86	115	159	298	0	0	0	78	73	51	38	29	23	21	19	16	14	13	3289.42
3289.40	23	25	28	32	37	44	55	71	96	137	39	0	0	0	0	84	58	43	33	26	22	19	16	15	13	3289.40
3289.38	23	25	28	32	37	43	54	70	93	133	30	39	46	26	22	79	56	41	32	26	21	19	16	14	13	3289.38
3289.36	22	25	28	31	36	42	51	65	85	116	165	27	30	30	95	68	50	38	30	24	21	18	16	14	13	3289.36
3289.34	22	24	27	30	34	40	47	59	74	94	121	149	207	94	69	54	43	34	28	23	20	17	15	14	12	3289.34
3289.32	21	23	26	29	33	37	43	51	62	75	90	102	136	65	51	43	36	30	25	21	19	17	15	13	12	3289.32
3289.30	21	23	25	28	31	34	39	45	52	60	68	75	98	48	39	35	30	26	22	20	18	16	14	13	12	3289.30
3289.28	20	22	24	26	29	32	35	39	44	49	54	57	74	58	31	28	25	22	20	18	16	15	13	12	11	3289.28
3289.26	19	21	22	24	27	29	32	35	37	41	44	46	59	46	29	23	21	20	18	17	15	14	13	12	11	3289.26
3289.24	18	19	21	23	25	27	29	31	33	35	36	38	48	38	24	20	19	18	16	15	14	13	12	11	10	3289.24
3289.22	17	18	20	21	23	24	26	28	29	31	32	33	42	33	21	18	17	16	15	14	13	12	11	10	10	3289.22
3289.20	16	17	19	20	21	22	24	25	26	27	28	29	37	29	19	15	15	14	13	13	12	11	11	10	9	3289.20
3289.18	15	16	17	18	20	21	22	23	24	25	25	26	33	26	25	14	13	13	12	12	11	10	10	9	9	3289.18
3289.16	15	16	16	17	18	19	20	21	22	22	23	23	29	23	23	15	12	12	11	11	10	10	9	9	8	3289.16
	295.10	295.14	295.18	295.22	295.26	295.30	295.34	295.38	295.42	295.46	295.50	295.54	295.58													

SECTION 1 OF 1 RUN NUMBER 1, POLLUTANT 2 (Toluene) .CALIBRATED CONCENTRATIONS (Concentrations in ppt) 1 CM-2 URBAN
LUBKIZOL CORP. - 900-12 - MEI & Toluene Impact - 20 Meter Grid

METEOROLOGY: HOUSTON HOBBY AIRPORT, 1961-1969 5 1 (A,B,C,Dd,Dn,E+F) TADB

	295.10	295.14	295.18	295.22	295.26	295.30	295.34	295.38	295.42	295.46	295.50	295.54	295.58													
3289.64	19	20	21	22	30	31	33	36	38	39	35	34	34	34	13	12	12	11	11	9	6	6	6	5	3289.64	
3289.62	20	21	22	23	25	34	36	40	41	43	39	38	38	38	38	14	13	13	12	11	7	7	6	6	6	3289.62
3289.60	21	22	24	25	27	37	39	44	46	48	44	43	43	43	42	16	15	14	14	12	8	7	7	6	6	3289.60
3289.58	21	22	25	27	29	31	43	45	51	54	55	50	49	49	18	18	17	16	14	9	9	8	7	7	6	3289.58
3289.56	22	23	25	29	31	33	36	50	53	61	64	59	57	57	21	20	19	16	11	10	9	9	8	7	7	3289.56
3289.54	18	23	27	29	31	36	40	56	60	70	74	70	68	67	25	24	22	18	12	11	10	9	8	8	6	3289.54
3289.52	19	20	22	31	34	37	43	48	68	76	91	88	86	85	31	28	23	15	14	12	11	10	8	7	7	3289.52
3289.50	19	21	23	26	36	40	45	51	63	93	105	114	113	112	40	32	21	18	15	13	11	9	8	8	7	3289.50
3289.48	20	22	24	27	31	34	49	59	70	115	136	171	168	60	53	40	25	20	17	13	11	10	9	8	7	3289.48
3289.46	20	22	24	27	31	36	44	67	83	104	169	160	144	53	46	37	29	23	17	14	12	11	10	9	8	3289.46
3289.44	20	22	25	28	32	37	45	57	73	122	172	238	224	79	42	43	32	24	19	15	13	11	10	9	8	3289.44
3289.42	16	18	20	22	26	39	48	62	82	114	215	0	0	0	58	50	35	26	20	16	15	13	11	10	9	3289.42
3289.40	16	18	20	23	26	31	39	50	68	98	23	0	0	0	59	41	30	23	18	15	13	11	10	9	3289.40	
3289.38	16	18	20	22	26	31	38	49	67	96	17	23	27	15	13	56	39	29	22	18	15	13	11	10	9	3289.38
3289.36	16	17	19	22	25	30	37	46	61	83	119	16	17	17	69	48	35	27	21	17	15	13	11	10	9	3289.36
3289.34	15	17	19	21	24	28	34	42	53	68	87	108	151	67	50	39	30	24	20	16	14	12	11	10	9	3289.34
3289.32	15	16	18	20	23	26	31	37	44	54	64	74	99	46	37	31	26	21	18	15	13	12	10	9	9	3289.32
3289.30	14	16	17	19	22	24	27	32	37	43	49	54	71	34	28	25	21	18	16	14	12	11	10	9	8	3289.30
3289.28	14	15	17	18	20	22	25	28	31	35	38	41	53	41	22	20	18	16	14	13	12	10	9	9	8	3289.28
3289.26	13	14	16	17	19	21	23	25	27	29	31	33	42	33	20	17	15	14	13	12	11	10	9	8	8	3289.26
3289.24	13	14	15	16	17	19	20	22	24	25	26	27	34	27	17	14	13	12	12	11	10	9	8	8	7	3289.24
3289.22	12	13	14	15	16	17	18	20	21	22	23	23	30	23	15	12	12	11	10	10	9	8	8	7	7	3289.22
3289.20	11	12	13	14	15	16	17	18	19	19	20	20	26	20	13	11	11	10	9	9	8	8	7	7	6	3289.20
3289.18	11	12	12	13	14	15	15	16	17	17	18	18	23	18	18	10	9	9	9	8	8	7	7	7	6	3289.18
3289.16	10	11	12	12	13	13	14	15	15	16	16	16	21	16	16	10	9	8	8	8	7	7	6	6	6	3289.16

TEXAS CLIMATOLOGICAL MODEL - VERSION - 2 (URBAN)

HIGHEST PREDICTED CONCENTRATIONS FOR EACH POLLUTANT FOR EACH SCENARIO

LUBRIZOL CORP. - 900-12 - MEK & Toluene Impact - 20 Meter Grid

RUN NUMBER	METEOROLOGY
1	HOUSTON HOBBY AIRPORT, 1961-1969 5 1 (A,B,C,Dd,Dn,E+F) TACD

UNCALIBRATED CONCENTRATIONS IN MICROGRAMS PER CUBIC METER

RUN NUMBER	POLLUTANT 1 CALIBRATION			POLLUTANT 2 CALIBRATION		
	A 1	B 1		A 2	B 2	
1	.0000	333.4260	Concentrations in ppt	.0000	260.9360	Concentrations in ppt

CALIBRATED CONC = A(1) + B(1)*CALCULATED CONC

RUN NUMBER	RECEPTOR COORDINATES		POLLUTANT 1 (MEK)		RECEPTOR COORDINATES		POLLUTANT 2 (Toluene)	
	X (KM)	Y (KM)	UNCALIBRATED CONCENTRATION	CALIBRATED CONCENTRATION	X (KM)	Y (KM)	UNCALIBRATED CONCENTRATION	CALIBRATED CONCENTRATION
1	293.320	3289.440	.9352	318.4991	293.320	3289.440	.9117	237.9055

ATTACHMENT 4

**Short-Term (30-Minute)
Computer Results**

4

UPPER AIR STATION= 3937
YEAR=1964

URBAN MODE HAS BEEN USED.

REPORTED WIND DIRECTIONS HAVE BEEN USED.

AVERAGING TIME OPTION (NTOPT):

ONLY OPTION 9 IS AVAILABLE FOR TEM8A8

OPTION 9: RESULTS CONVERTED TO 1 HOUR AVERAGING
TIME AND USED FOR 3 HOUR AND 24 HOUR
AVERAGES WITH HOURLY SEQUENTIAL
METEOROLOGY

WIND DIRECTION OPTIONS (NWDOPT):

ONLY OPTION 0 IS AVAILABLE FOR TEM8A8

OPTION 0: WIND DIRECTION IN DEGREES

WIND SPEED OPTIONS (NWSOPT):

ONLY OPTION 0 IS AVAILABLE FOR TEM8A8

OPTION 0: WIND SPEED IN METERS
PER SECOND

SURFACE WEATHER STATION=12918, 1964.
UPPER AIR STATION= 3937, 1964

POLLUTANT(S) 1&2 ON POLLUTANT SOURCE CARDS
ARE MODELED IN THIS RUN.

DT/DZ (E STABILITY) = 0.0200
DT/DZ (F STABILITY) = 0.0350

PUNCH INTERVAL = 1.

THE STACK-TIP DOWNWASH ALGORITHM IS IN EFFECT.

INPUT UNITS OPTION (NSRCOP):

OPTION 1: GRID PARAMETERS AND
SOURCE LOCATIONS
IN KM, SOURCE
PARAMETERS IN M, M/S,
CM/S, DEGREES CELSIUS.

OPTION 2: GRID PARAMETERS AND
SOURCE LOCATIONS
IN FT, SOURCE
PARAMETERS IN FT,
FT/S, LB/HR, DEGREES
FAHRENHEIT.

OPTION3: MIXED UNITS - GRID
PARAMETERS AND SOURCE
LOCATIONS IN KM,
SOURCE PARAMETERS IN
FT, FT/S, LB/HR,
DEGREES FAHRENHEIT.

(ALL AREA SOURCE INPUT
IS IN METRIC UNITS)

OPTION 1 HAS BEEN SELECTED

RECEPTOR GRID CONSISTS OF 25 COLUMNS AND 25 ROWS OF SPACING = 0.020 KM. SOUTHWEST CORNER OF GRID = 295.100 KM W, 3289.160 KM S.

AREA SOURCE SCALING FACTOR, 1ST POLLUTANT, = 0.0000 AREA SOURCE SCALING FACTOR, 2ND POLLUTANT, = 0.0000

CONCENTRATION CALIBRATION FACTORS: A(1) = 0.0000, B(1) = 0.3334; A(2) = 0.0000, B(2) = 0.2609

POL 1 ID:MEK

POL 1 CAL ID:Toluene

/ POL 2 ID:

POL 2 CAL ID:

OUTPUT WILL BE PRESENTED IN THE FOLLOWING FORM(S):

NUMBER	X (KM)	Y (KM)	AREA SIZE (KM)	E1 (G/S)	E2 (G/S)
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THE SUM OF THE AREA SOURCE EMISSION RATES IN THIS RUN IS 0.0000(G/S) FOR POLLUTANT 1 AND 0.0000(G/S) FOR POLLUTANT 2.

NUMBER	X (KM)	Y (KM)	E1 (G/S)	E2 (G/S)	HT (M)	DIAM (M)	VEL (M/S)	TEMP (K)	HB (M)	HW (M)	IDENTIFICATION
1	295.34	3289.39	0.2709	0.1608	7.62	0.010	0.010	293.150	16.	17.	TNK 8-32
2	295.34	3289.39	0.0064	0.0064	3.00	0.010	0.010	293.150	16.	17.	FUG 8-32
3	295.35	3289.43	0.0010	0.0004	5.79	0.010	0.010	293.150	16.	17.	TNK WO-6
4	295.35	3289.43	0.0014	0.0014	3.00	0.010	0.010	293.150	16.	17.	FUG WO-6

THE SUM OF THE POINT SOURCE EMISSION RATES IN THIS RUN IS

0.28(G/S) FOR POLLUTANT 1 AND

0.11(G/S) FOR POLLUTANT 2.

POLLUTANT 1

DAY NUMBER	PERIOD NUMBER	CONCENTRATION (UG/MM ³)	RECEPTOR X (KM)	COORDINATES Y (KM)
1.	7	5	719.8	295.340 3289.340
2.	77	5	719.8	295.340 3289.340
3.	249	7	719.8	295.340 3289.340
4.	290	5	719.8	295.340 3289.340
5.	305	7	719.8	295.340 3289.340
6.	327	19	719.8	295.340 3289.340
7.	2	3	716.7	295.340 3289.440
8.	86	23	716.7	295.340 3289.440
9.	165	3	716.7	295.340 3289.440
10.	171	6	716.7	295.340 3289.440
11.	186	23	716.7	295.340 3289.440
12.	291	3	716.7	295.340 3289.440
13.	345	20	716.7	295.340 3289.440
14.	82	4	681.9	295.300 3289.360
15.	76	21	681.4	295.300 3289.420
16.	80	6	681.4	295.300 3289.420
17.	145	6	681.4	295.300 3289.420
18.	152	2	681.4	295.300 3289.420
19.	261	21	681.4	295.300 3289.420
20.	267	21	681.4	295.300 3289.420
21.	292	5	681.4	295.300 3289.420
22.	323	2	681.4	295.300 3289.420
23.	356	2	680.7	295.380 3289.360
24.	120	22	670.7	295.320 3289.340
25.	303	3	670.7	295.320 3289.340
26.	77	4	667.4	295.360 3289.340
27.	154	7	667.4	295.360 3289.340
28.	235	7	667.4	295.360 3289.340
29.	330	8	667.4	295.360 3289.340
30.	334	18	667.4	295.360 3289.340
31.	1	4	666.8	295.320 3289.440
32.	71	22	666.8	295.320 3289.440
33.	267	22	666.8	295.320 3289.440
34.	291	24	666.8	295.320 3289.440
35.	292	1	666.8	295.320 3289.440
36.	292	2	666.8	295.320 3289.440
37.	316	4	666.8	295.320 3289.440
38.	316	5	666.8	295.320 3289.440
39.	316	24	666.8	295.320 3289.440
40.	151	5	666.5	295.360 3289.440
41.	23	1	616.6	295.280 3289.400
42.	243	7	616.6	295.280 3289.400
43.	292	6	616.6	295.280 3289.400
44.	51	4	616.6	295.280 3289.380
45.	125	2	616.6	295.280 3289.380
46.	146	2	616.6	295.280 3289.380
47.	306	3	616.6	295.280 3289.380
48.	323	4	616.6	295.280 3289.380
49.	190	6	616.4	295.400 3289.400
50.	191	1	616.4	295.400 3289.400

POLLUTANT 2

DAY NUMBER	PERIOD NUMBER	CONCENTRATION (UG/MM ³)	RECEPTOR X (KM)	COORDINATES Y (KM)
7	5	281.3	295.340	3289.340
77	5	281.3	295.340	3289.340
249	7	281.3	295.340	3289.340
290	5	281.3	295.340	3289.340
305	7	281.3	295.340	3289.340
327	19	281.3	295.340	3289.340
2	3	279.1	295.340	3289.440
86	23	279.1	295.340	3289.440
165	3	279.1	295.340	3289.440
171	6	279.1	295.340	3289.440
186	23	279.1	295.340	3289.440
291	3	279.1	295.340	3289.440
345	20	279.1	295.340	3289.440
82	4	265.9	295.300	3289.360
76	21	265.4	295.300	3289.420
80	6	265.4	295.300	3289.420
145	6	265.4	295.300	3289.420
152	2	265.4	295.300	3289.420
261	21	265.4	295.300	3289.420
267	21	265.4	295.300	3289.420
292	5	265.4	295.300	3289.420
323	2	265.4	295.300	3289.420
356	2	265.1	295.380	3289.360
120	22	262.4	295.320	3289.340
303	3	262.4	295.320	3289.340
77	4	260.1	295.360	3289.340
154	7	260.1	295.360	3289.340
235	7	260.1	295.360	3289.340
330	8	260.1	295.360	3289.340
334	18	260.1	295.360	3289.340
1	4	259.6	295.320	3289.440
71	22	259.6	295.320	3289.440
267	22	259.6	295.320	3289.440
291	24	259.6	295.320	3289.440
292	1	259.6	295.320	3289.440
292	2	259.6	295.320	3289.440
316	4	259.6	295.320	3289.440
316	5	259.6	295.320	3289.440
316	24	259.6	295.320	3289.440
151	5	259.5	295.360	3289.440
23	1	239.9	295.280	3289.400
243	7	239.9	295.280	3289.400
292	6	239.9	295.280	3289.400
51	4	239.9	295.280	3289.380
125	2	239.9	295.280	3289.380
146	2	239.9	295.280	3289.380
306	3	239.9	295.280	3289.380
323	4	239.9	295.280	3289.380
190	6	239.8	295.400	3289.400
191	1	239.8	295.400	3289.400

30 MINUTE METEOROLOGICAL DATA FOR POLLUTANT 1:

The Lubrizol Corporation - 900-12 - 30-Minute - Two Tanks plus Fugitives

SCENARIO NUMBER	DAY IN 1964	HOUR	STABILITY CLASS	WIND SPEED (METERS/SEC)	WIND DIRECTION	AMBIENT TEMPERATURE	INVERSION PENETRATION FACTOR	MIXING HEIGHT
1	7	5	DN	1.029	0.00 DEG	6.11 C	2.000	394.0 M
2	77	5	DN	1.029	0.00 DEG	10.56 C	2.000	63.0 M
3	249	7	DD	1.029	0.00 DEG	24.45 C	2.000	386.3 M
4	290	5	DN	1.029	0.00 DEG	11.11 C	2.000	101.0 M
5	305	7	DD	1.029	0.00 DEG	15.00 C	2.000	186.2 M
6	327	19	DN	1.029	0.00 DEG	6.67 C	2.000	528.0 M
7	2	3	DN	1.029	180.00 DEG	2.78 C	2.000	48.0 M
8	86	23	UN	1.029	180.00 DEG	7.78 C	2.000	192.3 M
9	165	3	DN	1.029	180.00 DEG	22.78 C	2.000	494.0 M
10	171	6	DN	1.029	180.00 DEG	23.89 C	2.000	700.0 M
11	186	23	DN	1.029	180.00 DEG	24.45 C	2.000	385.0 M
12	291	3	DN	1.029	180.00 DEG	15.00 C	2.000	48.0 M
13	345	20	DN	1.029	180.00 DEG	13.89 C	2.000	249.8 M
14	82	4	DN	1.029	50.00 DEG	6.67 C	2.000	295.0 M
15	76	21	DN	1.029	130.00 DEG	12.78 C	2.000	653.8 M
16	80	6	DN	1.029	130.00 DEG	11.11 C	2.000	42.0 M
17	145	6	DN	1.029	130.00 DEG	22.78 C	2.000	504.6 M
18	152	2	DN	1.029	130.00 DEG	17.22 C	2.000	325.0 M
19	261	21	DN	1.029	130.00 DEG	20.56 C	2.000	996.5 M
20	267	21	DN	1.029	130.00 DEG	23.89 C	2.000	1205.2 M
21	292	5	DN	1.029	130.00 DEG	15.00 C	2.000	78.0 M
22	323	2	DN	1.029	130.00 DEG	18.89 C	2.000	73.0 M
23	356	2	DN	1.029	310.00 DEG	11.11 C	2.000	249.3 M
24	120	22	DN	1.029	20.00 DEG	18.33 C	2.000	576.2 M
25	303	3	DN	1.029	20.00 DEG	18.89 C	2.000	560.0 M
26	77	4	DN	1.029	340.00 DEG	10.56 C	2.000	63.0 M
27	154	7	DD	1.029	340.00 DEG	18.33 C	2.000	383.3 M
28	235	7	DD	1.029	340.00 DEG	27.22 C	2.000	1025.7 M
29	330	8	DD	1.029	340.00 DEG	7.22 C	2.000	223.4 M
30	334	18	DD	1.029	340.00 DEG	18.89 C	2.000	600.8 M
31	1	4	DN	1.029	160.00 DEG	0.00 C	2.000	126.0 M
32	71	22	DN	1.029	160.00 DEG	11.67 C	2.000	286.7 M
33	267	22	DN	1.029	160.00 DEG	23.34 C	2.000	1041.1 M
34	291	24	DN	1.029	160.00 DEG	15.56 C	2.000	78.0 M
35	292	1	DN	1.029	160.00 DEG	15.56 C	2.000	78.0 M
36	292	2	DN	1.029	160.00 DEG	15.00 C	2.000	78.0 M
37	316	4	DN	1.029	160.00 DEG	13.89 C	2.000	57.0 M
38	316	5	DN	1.029	160.00 DEG	15.00 C	2.000	57.0 M
39	316	24	DN	1.029	160.00 DEG	18.33 C	2.000	176.0 M
40	151	5	DN	1.029	200.00 DEG	22.78 C	2.000	175.0 M
41	23	1	DN	1.029	100.00 DEG	16.67 C	2.000	505.4 M
42	243	7	DD	1.029	100.00 DEG	24.45 C	2.000	306.6 M
43	292	6	DN	1.029	100.00 DEG	15.00 C	2.000	78.0 M
44	51	4	DN	1.029	80.00 DEG	2.22 C	2.000	87.0 M
45	125	2	DN	1.029	80.00 DEG	18.89 C	2.000	823.0 M
46	146	2	DN	1.029	80.00 DEG	22.22 C	2.000	154.0 M
47	306	3	DN	1.029	80.00 DEG	15.56 C	2.000	175.0 M
48	323	4	DN	1.029	80.00 DEG	18.33 C	2.000	1429.4 M
49	190	6	DN	1.029	260.00 DEG	23.89 C	2.000	1057.9 M
50	191	1	DN	1.029	260.00 DEG	23.34 C	2.000	805.0 M

30 MINUTE METEOROLOGICAL DATA FOR POLLUTANT 21

SCENARIO NUMBER	DAY IN 1964	HOUR	STABILITY CLASS	WIND SPEED (METERS/SEC)	WIND DIRECTION	AMBIENT TEMPERATURE	INVERSION PENETRATION FACTOR	MIXING HEIGHT
1	7	5	DN	1.029	0.00 DEG	6.11 C	2.000	394.0 M
2	77	5	DN	1.029	0.00 DEG	10.56 C	2.000	63.0 M
3	249	7	DD	1.029	0.00 DEG	24.45 C	2.000	386.3 M
4	290	5	DN	1.029	0.00 DEG	11.11 C	2.000	101.0 M
5	305	7	DD	1.029	0.00 DEG	15.00 C	2.000	186.2 M
6	327	19	DN	1.029	0.00 DEG	6.67 C	2.000	528.0 M
7	2	3	DN	1.029	180.00 DEG	2.78 C	2.000	48.0 M
8	86	23	DN	1.029	180.00 DEG	7.78 C	2.000	192.3 M
9	165	3	DN	1.029	180.00 DEG	27.78 C	2.000	494.0 M
10	171	6	DN	1.029	180.00 DEG	23.89 C	2.000	700.0 M
11	186	23	DN	1.029	180.00 DEG	24.45 C	2.000	385.0 M
12	291	3	DN	1.029	180.00 DEG	15.00 C	2.000	48.0 M
13	345	20	DN	1.029	180.00 DEG	13.89 C	2.000	249.8 M
14	82	4	DN	1.029	50.00 DEG	6.67 C	2.000	295.0 M
15	76	21	DN	1.029	130.00 DEG	12.78 C	2.000	653.8 M
16	80	6	DN	1.029	130.00 DEG	11.11 C	2.000	42.0 M
17	145	6	DN	1.029	130.00 DEG	22.78 C	2.000	504.6 M
18	152	2	DN	1.029	130.00 DEG	17.22 C	2.000	325.0 M
19	261	21	DN	1.029	130.00 DEG	20.56 C	2.000	996.5 M
20	267	21	DN	1.029	130.00 DEG	23.89 C	2.000	1205.2 M
21	292	5	DN	1.029	130.00 DEG	15.00 C	2.000	78.0 M
22	323	2	DN	1.029	130.00 DEG	18.89 C	2.000	73.0 M
23	356	2	DN	1.029	310.00 DEG	11.11 C	2.000	249.3 M
24	120	22	DN	1.029	20.00 DEG	18.33 C	2.000	576.2 M
25	303	3	DN	1.029	20.00 DEG	18.89 C	2.000	560.0 M
26	77	4	DN	1.029	340.00 DEG	10.56 C	2.000	63.0 M
27	154	7	DD	1.029	340.00 DEG	18.33 C	2.000	383.3 M
28	235	7	DD	1.029	340.00 DEG	27.22 C	2.000	1025.7 M
29	330	8	DD	1.029	340.00 DEG	7.22 C	2.000	223.4 M
30	334	18	DD	1.029	340.00 DEG	18.89 C	2.000	600.8 M
31	1	4	DN	1.029	160.00 DEG	0.00 C	2.000	126.0 M
32	71	22	DN	1.029	160.00 DEG	11.67 C	2.000	286.7 M
33	267	22	DN	1.029	160.00 DEG	23.34 C	2.000	1041.1 M
34	291	24	DN	1.029	160.00 DEG	15.56 C	2.000	78.0 M
35	292	1	DN	1.029	160.00 DEG	15.56 C	2.000	78.0 M
36	292	2	DN	1.029	160.00 DEG	15.00 C	2.000	78.0 M
37	316	4	DN	1.029	160.00 DEG	13.89 C	2.000	57.0 M
38	316	5	DN	1.029	160.00 DEG	15.00 C	2.000	57.0 M
39	316	24	DN	1.029	160.00 DEG	18.33 C	2.000	176.0 M
40	151	5	DN	1.029	290.00 DEG	22.78 C	2.000	175.0 M
41	23	1	DN	1.029	100.00 DEG	16.67 C	2.000	505.4 M
42	243	7	DD	1.029	100.00 DEG	24.45 C	2.000	306.6 M
43	292	6	DN	1.029	100.00 DEG	15.00 C	2.000	78.0 M
44	51	4	DN	1.029	80.00 DEG	2.22 C	2.000	87.0 M
45	125	2	DN	1.029	80.00 DEG	18.89 C	2.000	823.0 M
46	146	2	DN	1.029	80.00 DEG	22.22 C	2.000	154.0 M
47	306	3	DN	1.029	80.00 DEG	15.56 C	2.000	175.0 M
48	323	4	DN	1.029	80.00 DEG	18.33 C	2.000	1429.4 M
49	190	6	DN	1.029	260.00 DEG	23.89 C	2.000	1057.9 M
50	191	1	DN	1.029	260.00 DEG	23.34 C	2.000	805.0 M

HIGHEST AND 2nd HIGHEST 30 MIN CONCENTRATIONS: The Lubrizol Corporation - 900-12 - 30-Minute - Two Tanks plus Fugitives

		POLLUTANT 1						POLLUTANT 2					
RECEPTOR COORDINATES		HIGHEST DAY	PERIOD	2nd HIGHEST DAY	PERIOD			HIGHEST DAY	PERIOD	2nd HIGHEST DAY	PERIOD		
X (KM)	Y (KM)	(UG/M ³)		(UG/M ³)				(UG/M ³)		(UG/M ³)			
295.10	3289.16	91.00	82	64.98	33	6		35.40	82	25.45	33	6	
295.12	3289.16	96.41	33	96.41	134	22		37.67	33	37.67	134	22	
295.14	3289.16	120.45	33	120.45	134	22		46.98	33	46.98	134	22	
295.16	3289.16	120.98	33	120.98	134	22		47.12	33	47.12	134	22	
295.18	3289.16	97.19	151	97.19	286	5		37.99	151	37.99	286	5	
295.20	3289.16	135.58	151	135.58	286	5		52.90	151	52.90	286	5	
295.22	3289.16	132.84	151	132.84	286	5		51.77	151	51.77	286	5	
295.24	3289.16	126.72	120	126.72	303	3		49.48	120	49.48	303	3	
295.26	3289.16	152.27	120	152.27	303	3		59.40	120	59.40	303	3	
295.28	3289.16	118.49	33	118.49	82	2		46.23	33	46.23	82	2	
295.30	3289.16	160.25	33	160.25	82	2		62.52	33	62.52	82	2	
295.32	3289.16	116.65	7	116.65	77	5		45.45	7	45.45	77	5	
295.34	3289.16	162.61	7	162.61	77	5		63.42	7	63.42	77	5	
295.36	3289.16	117.02	7	117.02	77	5		45.75	7	45.75	77	5	
295.38	3289.16	160.06	76	160.06	119	21		62.38	76	62.38	119	21	
295.40	3289.16	118.73	76	118.73	119	21		46.43	76	46.43	119	21	
295.42	3289.16	151.94	77	137.24	154	7		59.15	77	53.39	154	7	
295.44	3289.16	126.73	77	114.15	154	7		49.50	77	44.55	154	7	
295.46	3289.16	132.50	82	132.50	350	2		51.51	82	51.51	350	2	
295.48	3289.16	135.35	82	135.35	350	2		52.74	82	52.74	350	2	
295.50	3289.16	97.23	82	97.23	350	2		38.04	82	38.04	350	2	
295.52	3289.16	120.72	154	120.72	350	4		46.93	154	46.93	350	4	
295.54	3289.16	120.25	154	120.25	350	4		46.84	154	46.84	350	4	
295.56	3289.16	96.36	154	96.36	350	4		37.64	154	37.64	350	4	
295.58	3289.16	90.84	356	65.07	154	1		35.28	356	25.53	154	1	
295.10	3289.18	114.05	82	76.07	140	5		44.41	82	29.62	140	5	
295.12	3289.18	101.33	82	70.48	33	6		39.41	82	27.61	33	6	
295.14	3289.18	107.84	33	107.84	134	22		42.13	33	42.13	134	22	
295.16	3289.18	134.33	33	134.33	134	22		52.38	33	52.38	134	22	
295.18	3289.18	128.10	33	128.10	134	22		49.87	33	49.87	134	22	
295.20	3289.18	123.66	151	123.66	286	5		48.31	151	48.31	286	5	
295.22	3289.18	154.50	151	154.50	286	5		60.25	151	60.25	286	5	
295.24	3289.18	122.19	151	122.19	286	5		47.60	151	47.60	286	5	
295.26	3289.18	164.89	120	164.89	303	3		64.34	120	64.34	303	3	
295.28	3289.18	137.90	120	137.90	303	3		53.79	120	53.79	303	3	
295.30	3289.18	173.44	33	173.44	82	2		67.66	33	67.66	82	2	
295.32	3289.18	135.09	33	135.09	82	2		52.76	33	52.76	82	2	
295.34	3289.18	177.84	7	177.84	77	5		69.36	7	69.36	77	5	
295.36	3289.18	134.62	76	134.62	119	21		52.38	76	52.38	119	21	
295.38	3289.18	173.30	76	173.30	119	21		67.57	76	67.57	119	21	
295.40	3289.18	137.44	77	125.44	154	7		53.43	77	48.73	154	7	
295.42	3289.18	164.61	77	149.80	154	7		64.14	77	58.33	154	7	
295.44	3289.18	121.84	82	121.84	350	2		47.32	82	47.32	350	2	
295.46	3289.18	154.13	82	154.13	350	2		59.98	82	59.98	350	2	
295.48	3289.18	123.57	82	123.57	350	2		48.26	82	48.26	350	2	
295.50	3289.18	127.80	154	127.80	350	4		49.65	154	49.65	350	4	
295.52	3289.18	134.06	154	134.06	350	4		52.18	154	52.18	350	4	
295.54	3209.18	107.74	154	107.74	350	4		42.07	154	42.07	350	4	
295.56	3289.18	101.15	356	70.57	154	1		39.27	356	27.69	154	1	
295.58	3289.18	113.85	356	75.93	31	5		44.23	356	29.52	31	5	
295.10	3289.20	117.21	82	78.18	140	5		45.72	82	30.49	140	5	
295.12	3289.20	126.91	82	84.65	140	5		49.42	82	32.96	140	5	
295.14	3289.20	113.89	82	76.77	33	6		44.29	82	30.09	33	6	
295.16	3289.20	121.84	33	121.84	134	22		47.60	33	47.60	134	22	
295.18	3289.20	150.46	33	150.46	134	22		58.64	33	58.64	134	22	

295.30	3289.20	183.37	33	2	183.37	82	2	71.53	33	2	71.53	82	2
295.32	3289.20	158.98	33	2	158.98	82	2	62.08	33	2	62.08	82	2
295.34	3289.20	195.93	7	5	195.93	77	5	76.41	7	5	76.41	77	5
295.36	3289.20	158.44	76	2	158.44	119	21	61.65	76	2	61.65	119	21
295.38	3289.20	183.31	76	2	183.31	119	21	71.51	76	2	71.51	119	21
295.40	3289.20	172.40	77	4	158.60	154	7	67.04	77	4	61.64	154	7
295.42	3289.20	163.17	77	4	149.65	154	7	63.67	77	4	58.35	154	7
295.44	3289.20	162.34	82	1	162.34	350	2	63.09	82	1	63.09	350	2
295.46	3289.20	155.29	82	1	155.29	350	2	60.53	82	1	60.53	350	2
295.48	3289.20	132.58	154	1	132.58	350	4	51.47	154	1	51.47	350	4
295.50	3289.20	150.10	154	1	150.10	350	4	58.39	154	1	58.39	350	4
295.52	3289.20	121.67	154	1	121.67	350	4	47.49	154	1	47.49	350	4
295.54	3289.20	113.68	356	2	76.86	154	1	44.13	356	2	30.16	154	1
295.56	3289.20	126.67	356	2	84.48	31	5	49.24	356	2	32.84	31	5
295.58	3289.20	117.03	356	2	78.06	31	5	45.59	356	2	30.41	31	5
295.10	3289.22	93.94	82	4	85.51	1	3	36.75	82	4	33.21	1	3
295.12	3289.22	124.99	82	4	83.37	140	5	48.77	82	4	32.53	140	5
295.14	3289.22	141.92	82	4	94.66	140	5	55.27	82	4	36.86	140	5
295.16	3289.22	129.42	82	4	86.32	140	5	50.32	82	4	33.56	140	5
295.18	3289.22	139.34	33	6	139.34	134	22	54.42	33	6	54.42	134	22
295.20	3289.22	168.92	33	6	168.92	134	22	65.81	33	6	65.81	134	22
295.22	3289.22	132.73	33	6	132.73	134	22	51.63	33	6	51.63	134	22
295.24	3289.22	188.50	151	6	188.50	286	5	73.52	151	6	73.52	286	5
295.26	3289.22	147.09	151	6	147.09	286	5	57.29	151	6	57.29	286	5
295.28	3289.22	205.27	120	22	205.27	303	3	80.07	120	22	80.07	303	3
295.30	3289.22	185.98	33	2	185.98	82	2	72.55	33	2	72.55	82	2
295.32	3289.22	188.91	33	2	188.91	82	2	73.75	33	2	73.75	82	2
295.34	3289.22	217.77	7	5	217.77	77	5	84.92	7	5	84.92	77	5
295.36	3289.22	188.30	76	2	188.30	119	21	73.27	76	2	73.27	119	21
295.38	3289.22	186.05	76	2	186.05	119	21	72.64	76	2	72.64	119	21
295.40	3289.22	204.69	77	4	189.86	154	7	79.64	77	4	73.83	154	7
295.42	3289.22	146.64	82	1	146.64	350	2	56.93	82	1	56.93	350	2
295.44	3289.22	187.96	82	1	187.96	350	2	73.13	82	1	73.13	350	2
295.46	3289.22	132.43	154	1	132.43	350	4	51.39	154	1	51.39	350	4
295.48	3289.22	168.47	154	1	168.47	350	4	65.48	154	1	65.48	350	4
295.50	3289.22	139.06	154	1	139.06	350	4	54.23	154	1	54.23	350	4
295.52	3289.22	129.18	356	2	86.16	31	5	50.14	356	2	33.44	31	5
295.54	3289.22	141.63	356	2	94.46	31	5	55.05	356	2	36.72	31	5
295.56	3289.22	124.78	356	2	83.22	31	5	48.62	356	2	32.43	31	5
295.58	3289.22	93.88	356	2	85.41	297	2	36.71	356	2	33.13	297	2
295.10	3289.24	124.43	1	3	124.43	175	6	48.39	1	3	48.39	175	6
295.12	3289.24	108.94	1	3	108.94	175	6	42.32	1	3	42.32	175	6
295.14	3289.24	131.36	82	4	87.61	140	5	51.28	82	4	34.20	140	5
295.16	3289.24	159.30	82	4	106.25	140	5	62.04	82	4	41.38	140	5
295.18	3289.24	149.06	82	4	99.42	140	5	57.95	82	4	38.65	140	5
295.20	3289.24	161.73	33	6	161.73	134	22	63.14	33	6	63.14	134	22
295.22	3289.24	189.12	33	6	189.12	134	22	73.63	33	6	73.63	134	22
295.24	3289.24	173.57	151	6	173.57	286	5	67.81	151	6	67.81	286	5
295.26	3289.24	207.62	151	6	207.62	286	5	80.90	151	6	80.90	286	5
295.28	3289.24	219.57	120	22	219.57	303	3	85.69	120	22	85.69	303	3
295.30	3289.24	181.63	33	2	181.63	82	2	70.83	33	2	70.83	82	2
295.32	3289.24	229.52	33	2	229.52	82	2	89.55	33	2	89.55	82	2
295.34	3289.24	246.65	7	5	246.65	77	5	96.14	7	5	96.14	77	5
295.36	3289.24	228.82	76	2	228.82	119	21	89.01	76	2	89.01	119	21
295.38	3289.24	181.93	76	2	181.93	119	21	71.10	76	2	71.10	119	21
295.40	3289.24	219.04	77	4	204.92	154	7	85.32	77	4	79.78	154	7
295.42	3289.24	206.94	82	1	206.94	350	2	80.38	82	1	80.38	350	2
295.44	3289.24	173.15	82	1	173.15	350	2	67.53	82	1	67.53	350	2
295.46	3289.24	188.59	154	1	188.59	350	4	73.24	154	1	73.24	350	4
295.48	3289.24	161.29	154	1	161.29	350	4	62.84	154	1	62.84	350	4
295.50	3289.24	148.78	356	2	99.23	31	5	57.73	356	2	38.51	31	5
295.52	3289.24	158.94	356	2	106.01	31	5	61.77	356	2	41.20	31	5
295.54	3289.24	131.10	356	2	87.44	31	5	51.11	356	2	34.09	31	5

295.16	3289.20	178.90	82	4	106.70	1	3	32.49	82	4	41.45	1	3
295.18	3289.26	178.90	82	4	119.32	140	5	69.68	82	4	46.48	140	5
295.20	3289.26	174.57	82	4	116.43	140	5	67.85	82	4	45.26	140	5
295.22	3289.26	191.22	33	6	191.22	134	22	74.62	33	6	74.62	134	22
295.24	3289.26	208.60	33	6	208.60	134	22	81.16	33	6	81.16	134	22
295.26	3289.26	234.88	151	6	234.88	286	5	91.60	151	6	91.60	286	5
295.28	3289.26	206.16	120	22	206.16	303	3	80.51	120	22	80.51	303	3
295.30	3289.26	255.09	120	22	255.09	303	3	99.46	120	22	99.46	303	3
295.32	3289.26	284.88	33	2	284.88	82	2	111.14	33	2	111.14	82	2
295.34	3289.26	293.17	7	5	293.17	77	5	114.28	7	5	114.28	77	5
295.36	3289.26	284.12	76	2	284.12	119	21	110.56	76	2	110.56	119	21
295.38	3289.26	254.14	77	4	254.14	154	7	98.72	77	4	98.69	154	7
295.40	3289.26	205.90	77	4	205.78	154	7	80.38	77	4	80.28	154	7
295.42	3289.26	234.03	82	1	234.03	350	2	91.00	82	1	91.00	350	2
295.44	3289.26	208.05	154	1	208.05	350	4	80.74	154	1	80.74	350	4
295.46	3289.26	190.57	154	1	190.57	350	4	74.17	154	1	74.17	350	4
295.48	3289.26	174.25	356	2	116.22	31	5	67.60	356	2	45.09	31	5
295.50	3289.26	178.43	356	2	119.01	31	5	69.35	356	2	46.25	31	5
295.52	3289.26	134.01	356	2	106.70	297	2	52.28	356	2	41.37	297	2
295.54	3289.26	138.09	297	2	92.10	56	4	53.58	297	2	35.73	56	4
295.56	3289.26	145.03	297	2	95.73	56	4	56.34	297	2	37.58	56	4
295.58	3289.26	132.10	297	2	88.11	56	4	51.41	297	2	34.29	56	4
295.10	3289.28	105.45	57	3	105.45	147	5	40.93	57	3	40.93	147	5
295.12	3289.28	130.00	1	3	130.00	175	6	50.74	1	3	50.74	175	6
295.14	3289.28	160.52	1	3	160.52	175	6	62.50	1	3	62.50	175	6
295.16	3289.28	171.75	1	3	171.75	175	6	66.75	1	3	66.75	175	6
295.18	3289.28	146.87	1	3	146.87	175	6	57.01	1	3	57.01	175	6
295.20	3289.28	199.46	82	4	133.04	140	5	77.71	82	4	51.83	140	5
295.22	3289.28	208.79	82	4	139.25	140	5	81.13	82	4	54.11	140	5
295.24	3289.28	236.10	33	6	236.10	134	22	92.04	33	6	92.04	134	22
295.26	3289.28	235.73	33	6	235.73	134	22	91.63	33	6	91.63	134	22
295.28	3289.28	300.03	151	6	300.03	286	5	116.87	151	6	116.87	286	5
295.30	3289.28	330.90	120	22	330.90	303	3	129.07	120	22	129.07	303	3
295.32	3289.28	347.94	33	2	347.94	82	2	135.74	33	2	135.74	82	2
295.34	3289.28	354.23	7	5	354.23	77	5	138.11	7	5	138.11	77	5
295.36	3289.28	347.25	6	18	347.25	76	2	135.25	6	18	135.25	76	2
295.38	3289.28	329.82	77	4	329.82	154	7	128.28	77	4	128.28	154	7
295.40	3289.28	299.07	82	1	299.07	290	7	116.15	82	1	116.15	290	7
295.42	3289.28	235.31	17	7	235.31	154	1	91.29	17	7	91.29	154	1
295.44	3289.28	235.17	154	1	235.17	350	4	91.39	154	1	91.39	350	4
295.46	3289.28	208.41	356	2	139.00	31	5	80.84	356	2	53.92	31	5
295.48	3289.28	198.84	356	2	132.62	31	5	77.27	356	2	51.54	31	5
295.50	3289.28	146.73	297	2	130.10	356	2	56.90	297	2	50.82	356	2
295.52	3289.28	171.46	297	2	114.36	56	4	66.54	297	2	44.38	56	4
295.54	3289.28	160.19	297	2	106.84	56	4	62.27	297	2	41.53	56	4
295.56	3289.28	129.76	297	2	86.54	56	4	50.58	297	2	33.73	56	4
295.58	3289.28	105.36	156	3	105.36	184	1	40.86	156	3	40.86	184	1
295.10	3289.30	144.78	57	3	144.78	147	5	56.29	57	3	56.29	147	5
295.12	3289.30	146.47	57	3	146.47	147	5	56.89	57	3	56.89	147	5
295.14	3289.30	134.02	57	3	134.02	147	5	52.01	57	3	52.01	147	5
295.16	3289.30	159.09	1	3	159.09	175	6	62.05	1	3	62.05	175	6
295.18	3289.30	200.82	1	3	200.82	175	6	78.10	1	3	78.10	175	6
295.20	3289.30	201.24	1	3	201.24	175	6	78.13	1	3	78.13	175	6
295.22	3289.30	222.07	82	4	148.11	140	5	86.53	82	4	57.71	140	5
295.24	3289.30	269.45	82	4	179.71	140	5	104.68	82	4	69.82	140	5
295.26	3289.30	311.95	33	6	311.95	134	22	121.53	33	6	121.53	134	22
295.28	3289.30	319.26	151	6	319.26	286	5	124.65	151	6	124.65	286	5
295.30	3289.30	348.66	120	22	348.66	303	3	136.19	120	22	136.19	303	3
295.32	3289.30	404.65	33	2	404.65	82	2	157.95	33	2	157.95	82	2
295.34	3289.30	436.62	7	5	436.62	77	5	170.33	7	5	170.33	77	5
295.36	3289.30	404.00	6	18	404.00	76	2	157.56	6	18	157.56	76	2
295.38	3289.30	347.53	77	4	347.53	154	7	135.46	77	4	135.46	154	7
295.40	3289.30	317.89	82	1	317.89	290	7	123.73	82	1	123.73	290	7

295.52	3289.30	158.67	297	2	105.83	56	4	61.76	297	2	41.19	56	4
295.54	3289.30	133.92	156	3	133.92	184	1	51.93	156	3	51.93	104	1
295.56	3289.30	146.31	156	3	146.31	184	1	56.77	156	3	56.77	104	1
295.58	3289.30	144.60	156	3	144.60	184	1	56.16	156	3	56.16	184	1
295.10	3289.32	124.12	57	3	124.12	147	5	48.45	57	3	48.45	147	5
295.12	3289.32	150.37	57	3	150.37	147	5	58.57	57	3	58.57	147	5
295.14	3289.32	174.54	57	3	174.54	147	5	67.87	57	3	67.87	147	5
295.16	3289.32	188.15	57	3	188.15	147	5	73.06	57	3	73.06	147	5
295.18	3289.32	178.66	57	3	178.66	147	5	69.31	57	3	69.31	147	5
295.20	3289.32	205.42	1	3	205.42	175	6	79.99	1	3	79.99	175	6
295.22	3289.32	269.61	1	3	269.61	175	6	104.70	1	3	104.70	175	6
295.24	3289.32	247.37	82	4	246.36	1	3	96.51	82	4	95.62	1	3
295.26	3289.32	361.78	82	4	241.30	14	7	140.65	82	4	93.81	14	7
295.28	3289.32	424.34	33	6	424.34	134	22	165.30	33	6	165.30	134	22
295.30	3289.32	485.13	151	6	485.13	286	5	189.25	151	6	189.25	286	5
295.32	3289.32	474.57	120	22	474.57	303	3	185.36	120	22	185.36	303	3
295.34	3289.32	551.65	7	5	551.65	77	5	215.37	7	5	215.37	77	5
295.36	3289.32	472.82	77	4	472.82	154	7	183.95	77	4	183.95	154	7
295.38	3289.32	483.32	82	1	483.32	290	7	187.93	82	1	187.93	290	7
295.40	3289.32	422.74	17	7	422.74	154	1	164.16	17	7	164.16	154	1
295.42	3289.32	361.07	356	2	249.82	31	5	140.13	356	2	93.46	31	5
295.44	3289.32	246.29	356	2	246.28	297	2	95.78	356	2	95.53	297	2
295.46	3289.32	269.24	297	2	179.58	37	8	104.44	297	2	69.66	37	8
295.48	3289.32	204.77	297	2	145.21	156	3	79.53	297	2	56.27	156	3
295.50	3289.32	178.50	156	3	178.50	184	1	69.19	156	3	69.19	184	1
295.52	3289.32	187.93	156	3	187.93	184	1	72.90	156	3	72.90	184	1
295.54	3289.32	174.27	156	3	174.27	184	1	67.68	156	3	67.68	184	1
295.56	3289.32	150.13	156	3	150.13	184	1	58.40	156	3	58.40	184	1
295.58	3289.32	123.95	156	3	123.95	184	1	48.33	156	3	48.33	184	1
295.10	3289.34	145.64	51	4	145.64	125	2	56.55	51	4	56.55	125	2
295.12	3289.34	148.62	51	4	148.62	125	2	57.67	51	4	57.67	125	2
295.14	3289.34	145.62	51	4	145.62	125	2	56.49	51	4	56.49	125	2
295.16	3289.34	154.01	57	3	154.01	147	5	60.08	57	3	60.08	147	5
295.18	3289.34	201.46	57	3	201.44	147	5	78.36	57	3	78.36	147	5
295.20	3289.34	247.92	57	3	247.92	147	5	96.23	57	3	96.23	147	5
295.22	3289.34	272.37	57	3	272.37	147	5	105.68	57	3	105.68	147	5
295.24	3289.34	311.18	1	3	311.18	175	6	121.08	1	3	121.08	175	6
295.26	3289.34	400.89	1	3	400.89	175	6	155.76	1	3	155.76	175	6
295.28	3289.34	498.36	82	4	332.39	14	7	193.93	82	4	129.35	14	7
295.30	3289.34	586.75	33	6	586.75	134	22	228.65	33	6	228.65	134	22
295.32	3289.34	670.69	120	22	670.69	303	3	262.42	120	22	262.42	303	3
295.34	3289.34	719.79	7	5	719.79	77	5	281.33	7	5	281.33	77	5
295.36	3289.34	667.43	77	4	667.43	154	7	260.13	77	4	260.13	154	7
295.38	3289.34	585.59	17	7	585.59	154	1	227.78	17	7	227.78	154	1
295.40	3289.34	497.48	356	2	331.80	31	5	193.32	356	2	128.94	31	5
295.42	3289.34	400.63	297	2	267.21	37	8	155.56	297	2	103.75	37	8
295.44	3289.34	310.35	297	2	231.95	156	3	120.52	297	2	90.00	156	3
295.46	3289.34	272.18	156	3	272.18	184	1	105.55	156	3	105.55	184	1
295.48	3289.34	247.65	156	3	247.65	184	1	96.06	156	3	96.06	184	1
295.50	3289.34	201.04	156	3	201.04	184	1	78.07	156	3	78.07	184	1
295.52	3289.34	153.65	156	3	153.65	184	1	59.82	156	3	59.82	184	1
295.54	3289.34	145.56	82	3	145.56	190	3	56.44	82	3	56.44	190	3
295.56	3289.34	148.52	82	3	148.52	190	3	57.60	82	3	57.60	190	3
295.58	3289.34	145.53	82	3	145.53	190	3	56.48	82	3	56.48	190	3
295.10	3289.36	138.35	51	4	138.35	125	2	53.90	51	4	53.90	125	2
295.12	3289.36	157.28	51	4	157.28	125	2	61.20	51	4	61.20	125	2
295.14	3289.36	178.72	51	4	178.72	125	2	69.47	51	4	69.47	125	2
295.16	3289.36	201.93	51	4	201.93	125	2	78.41	51	4	78.41	125	2
295.18	3289.36	224.49	51	4	224.49	125	2	87.11	51	4	87.11	125	2
295.20	3289.36	248.13	51	4	248.13	125	2	96.24	51	4	96.24	125	2
295.22	3289.36	263.48	51	4	263.48	125	2	102.19	51	4	102.19	125	2
295.24	3289.36	338.74	57	3	338.74	147	5	131.66	57	3	131.66	147	5
295.26	3289.36	456.08	57	3	456.08	147	5	177.16	57	3	177.16	147	5

295.38	3289.36	680.68	356	2	560.65	297	2	265.09	356	2	218.35	297	2
295.40	3289.36	526.18	297	2	427.44	156	3	204.62	297	2	166.23	156	3
295.42	3289.36	456.01	156	3	456.01	184	1	177.13	156	3	177.13	184	1
295.44	3289.36	338.06	156	3	338.06	184	1	131.21	156	3	131.21	184	1
295.46	3289.36	263.48	82	3	263.48	98	13	102.19	82	3	102.19	98	13
295.48	3289.36	247.96	82	3	247.96	98	13	96.12	82	3	96.12	98	13
295.50	3289.36	224.37	82	3	224.37	190	3	87.03	82	3	87.03	190	3
295.52	3289.36	201.73	82	3	201.73	190	3	78.28	82	3	78.28	190	3
295.54	3289.36	178.53	82	3	178.53	190	3	69.34	82	3	69.34	190	3
295.56	3289.36	157.11	82	3	157.11	190	3	61.09	82	3	61.09	190	3
295.58	3289.36	138.23	82	3	138.23	190	3	53.82	82	3	53.82	190	3
295.10	3289.38	143.58	23	6	143.58	133	3	55.72	23	6	55.72	133	3
295.12	3289.38	154.41	23	6	154.41	133	3	59.90	23	6	59.90	133	3
295.14	3289.38	166.53	23	6	166.53	133	3	64.59	23	6	64.59	133	3
295.16	3289.38	180.03	23	6	180.03	133	3	69.82	23	6	69.82	133	3
295.18	3289.38	195.89	23	6	195.89	133	3	75.91	23	6	75.91	133	3
295.20	3289.38	223.74	23	6	223.74	133	3	86.74	23	6	86.74	133	3
295.22	3289.38	255.99	23	6	255.99	133	3	99.30	23	6	99.30	133	3
295.24	3289.38	330.75	51	4	330.75	125	2	128.52	51	4	128.52	125	2
295.26	3289.38	453.66	51	4	453.66	125	2	176.27	51	4	176.27	125	2
295.28	3289.38	616.56	51	4	616.56	125	2	239.88	51	4	239.88	125	2
295.30	3289.38	4.39	33	6	4.39	134	22	3.26	33	6	3.26	134	22
295.32	3289.38	6.20	151	6	6.20	286	5	4.60	151	6	4.60	286	5
295.34	3289.38	6.92	33	2	6.92	82	2	5.15	33	2	5.15	82	2
295.36	3289.38	6.92	6	18	6.92	76	2	5.14	6	18	5.14	76	2
295.38	3289.38	6.20	82	1	6.20	290	7	4.60	82	1	4.60	290	7
295.40	3289.38	616.38	82	3	616.38	98	13	239.81	82	3	239.81	98	13
295.42	3289.38	453.51	82	3	453.51	98	13	176.21	82	3	176.21	98	13
295.44	3289.38	330.27	82	3	330.27	98	13	128.21	82	3	128.21	98	13
295.46	3289.38	255.95	17	10	255.95	76	1	99.28	17	10	99.28	76	1
295.48	3289.38	223.71	17	10	223.71	76	1	86.73	17	10	86.73	76	1
295.50	3289.38	194.80	76	1	194.80	157	1	75.51	76	1	75.51	157	1
295.52	3289.38	179.93	76	1	179.93	157	1	69.74	76	1	69.74	157	1
295.54	3289.38	166.47	76	1	166.47	157	1	64.55	76	1	64.55	157	1
295.56	3289.38	154.35	76	1	154.35	157	1	59.87	76	1	59.87	157	1
295.58	3289.38	143.53	76	1	143.53	157	1	55.68	76	1	55.68	157	1
295.10	3289.40	144.01	23	6	144.01	133	3	56.05	23	6	56.05	133	3
295.12	3289.40	154.86	23	6	154.86	133	3	60.26	23	6	60.26	133	3
295.14	3289.40	166.98	23	6	166.98	133	3	64.95	23	6	64.95	133	3
295.16	3289.40	180.46	23	6	180.46	133	3	70.16	23	6	70.16	133	3
295.18	3289.40	196.31	23	6	196.31	133	3	76.26	23	6	76.26	133	3
295.20	3289.40	224.12	23	6	224.12	133	3	87.07	23	6	87.07	133	3
295.22	3289.40	256.21	23	6	256.21	133	3	99.54	23	6	99.54	133	3
295.24	3289.40	330.65	23	1	330.65	243	7	128.35	23	1	128.35	243	7
295.26	3289.40	453.92	23	1	453.92	243	7	176.37	23	1	176.37	243	7
295.28	3289.40	616.60	23	1	616.60	243	7	239.90	23	1	239.90	243	7
295.30	3289.40	6.20	1	3	6.20	175	6	4.60	1	3	4.60	175	6
295.32	3289.40	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.34	3289.40	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.36	3289.40	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.38	3289.40	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.40	3289.40	616.43	190	6	616.43	191	1	239.83	190	6	239.83	191	1
295.42	3289.40	453.78	190	6	453.78	191	1	176.32	190	6	176.32	191	1
295.44	3289.40	330.55	190	6	330.55	191	1	128.31	190	6	128.31	191	1
295.46	3289.40	256.06	17	10	256.06	76	1	99.44	17	10	99.44	76	1
295.48	3289.40	224.00	17	10	224.00	76	1	87.00	17	10	87.00	76	1
295.50	3289.40	195.21	76	1	195.21	157	1	75.86	76	1	75.86	157	1
295.52	3289.40	180.37	76	1	180.37	157	1	70.10	76	1	70.10	157	1
295.54	3289.40	166.92	76	1	166.92	157	1	64.91	76	1	64.91	157	1
295.56	3289.40	154.82	76	1	154.82	157	1	60.23	76	1	60.23	157	1
295.58	3289.40	143.99	76	1	143.99	157	1	56.04	76	1	56.04	157	1
295.10	3289.42	137.73	23	1	137.73	292	6	53.43	23	1	53.43	292	6
295.12	3289.42	156.76	23	1	156.76	292	6	60.81	23	1	60.81	292	6

295.24	3289.42	526.79	167	2	526.79	314	5	131.33	18	8	131.33	152	3
295.26	3289.42	456.00	18	8	456.00	152	3	177.13	18	8	177.13	152	3
295.28	3289.42	526.79	167	2	526.79	314	5	204.86	167	2	204.86	314	5
295.30	3289.42	681.44	76	21	681.44	80	6	265.38	76	21	265.38	80	6
295.32	3289.42	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.34	3289.42	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.36	3289.42	0.00	1	1	0.00	1	2	0.00	1	1	0.00	1	2
295.38	3289.42	559.78	30	24	559.78	147	1	218.01	30	24	218.01	147	1
295.40	3289.42	526.48	30	24	526.48	147	1	204.74	30	24	204.74	147	1
295.42	3289.42	304.08	25	7	304.08	51	22	118.12	25	7	118.12	51	22
295.44	3289.42	249.20	190	6	249.20	191	1	96.72	190	6	96.72	191	1
295.46	3289.42	263.64	190	6	263.64	191	1	102.38	190	6	102.38	191	1
295.48	3289.42	248.18	190	6	248.18	191	1	96.32	190	6	96.32	191	1
295.50	3289.42	224.47	190	6	224.47	191	1	87.11	190	6	87.11	191	1
295.52	3289.42	201.70	190	6	201.70	191	1	78.24	190	6	78.24	191	1
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295.56	3289.42	156.75	190	6	156.75	191	1	60.81	190	6	60.81	191	1
295.58	3289.42	137.72	190	6	137.72	191	1	53.43	190	6	53.43	191	1
295.10	3289.44	145.87	23	1	145.87	292	6	56.73	23	1	56.73	292	6
295.12	3289.44	149.01	23	1	149.01	292	6	57.99	23	1	57.99	292	6
295.14	3289.44	146.19	23	1	146.19	292	6	56.94	23	1	56.94	292	6
295.16	3289.44	153.02	152	3	153.02	314	3	59.31	152	3	59.31	314	3
295.18	3289.44	200.77	152	3	200.77	314	3	77.82	152	3	77.82	314	3
295.20	3289.44	247.51	18	8	247.51	152	3	95.94	18	8	95.94	152	3
295.22	3289.44	272.05	18	8	272.05	152	3	105.50	18	8	105.50	152	3
295.24	3289.44	310.38	167	2	310.38	314	5	120.43	167	2	120.43	314	5
295.26	3289.44	400.43	167	2	400.43	314	5	155.48	167	2	155.48	314	5
295.28	3289.44	497.53	76	21	497.53	80	6	193.34	76	21	193.34	80	6
295.30	3289.44	585.31	1	5	585.31	3	5	227.67	1	5	227.67	3	5
295.32	3289.44	666.84	1	4	666.84	71	22	259.60	1	4	259.60	71	22
295.34	3289.44	716.67	2	3	716.67	86	23	279.10	2	3	279.10	86	23
295.36	3289.44	666.50	151	5	666.50	147	2	259.47	151	5	259.47	147	2
295.38	3289.44	585.36	22	7	585.36	41	5	227.69	22	7	227.69	41	5
295.40	3289.44	331.77	32	24	331.77	74	9	128.93	32	24	128.93	74	9
295.42	3289.44	400.44	30	24	400.44	147	1	155.48	30	24	155.48	147	1
295.44	3289.44	310.23	30	24	310.23	147	1	120.37	30	24	120.37	147	1
295.46	3289.44	181.72	25	7	181.72	51	22	70.56	25	7	70.56	51	22
295.48	3289.44	165.05	25	7	165.05	51	22	63.98	25	7	63.98	51	22
295.50	3289.44	133.87	51	22	133.87	52	23	51.89	51	22	51.89	52	23
295.52	3289.44	134.67	190	6	134.67	191	1	52.59	190	6	52.59	191	1
295.54	3289.44	146.34	190	6	146.34	191	1	57.04	190	6	57.04	191	1
295.56	3289.44	149.12	190	6	149.12	191	1	58.07	190	6	58.07	191	1
295.58	3289.44	145.95	190	6	145.95	191	1	56.80	190	6	56.80	191	1
295.10	3289.46	123.28	152	3	123.28	314	3	47.81	152	3	47.81	314	3
295.12	3289.46	149.72	152	3	149.72	314	3	58.08	152	3	58.08	314	3
295.14	3289.46	174.15	152	3	174.15	314	3	67.58	152	3	67.58	314	3
295.16	3289.46	188.07	152	3	188.07	314	3	73.02	152	3	73.02	314	3
295.18	3289.46	178.91	152	3	178.91	314	3	69.53	152	3	69.53	314	3
295.20	3289.46	204.42	167	2	204.42	314	5	79.22	167	2	79.22	314	5
295.22	3289.46	269.07	167	2	269.07	314	5	104.32	167	2	104.32	314	5
295.24	3289.46	246.37	167	2	246.37	314	5	95.70	167	2	95.70	314	5
295.26	3289.46	360.96	76	21	360.96	80	6	140.08	76	21	140.08	80	6
295.28	3289.46	422.80	1	5	422.80	3	5	164.18	1	5	164.18	3	5
295.30	3289.46	482.86	3	21	482.86	28	5	187.61	3	21	187.61	28	5
295.32	3289.46	471.80	1	4	471.80	71	22	183.40	1	4	183.40	71	22
295.34	3289.46	548.98	2	3	548.98	86	23	213.44	2	3	213.44	86	23
295.36	3289.46	472.17	151	5	472.17	77	23	183.55	151	5	183.55	77	23
295.38	3289.46	482.82	147	2	482.82	289	24	187.60	147	2	187.60	289	24
295.40	3289.46	422.71	22	7	422.71	41	5	164.14	22	7	164.14	41	5
295.42	3289.46	240.75	32	24	240.75	74	9	93.43	32	24	93.43	74	9
295.44	3289.46	247.30	30	24	247.30	147	1	96.35	30	24	96.35	147	1
295.46	3289.46	269.42	30	24	269.42	147	1	104.59	30	24	104.59	147	1
295.48	3289.46	204.34	30	24	204.34	147	1	79.19	30	24	79.19	147	1

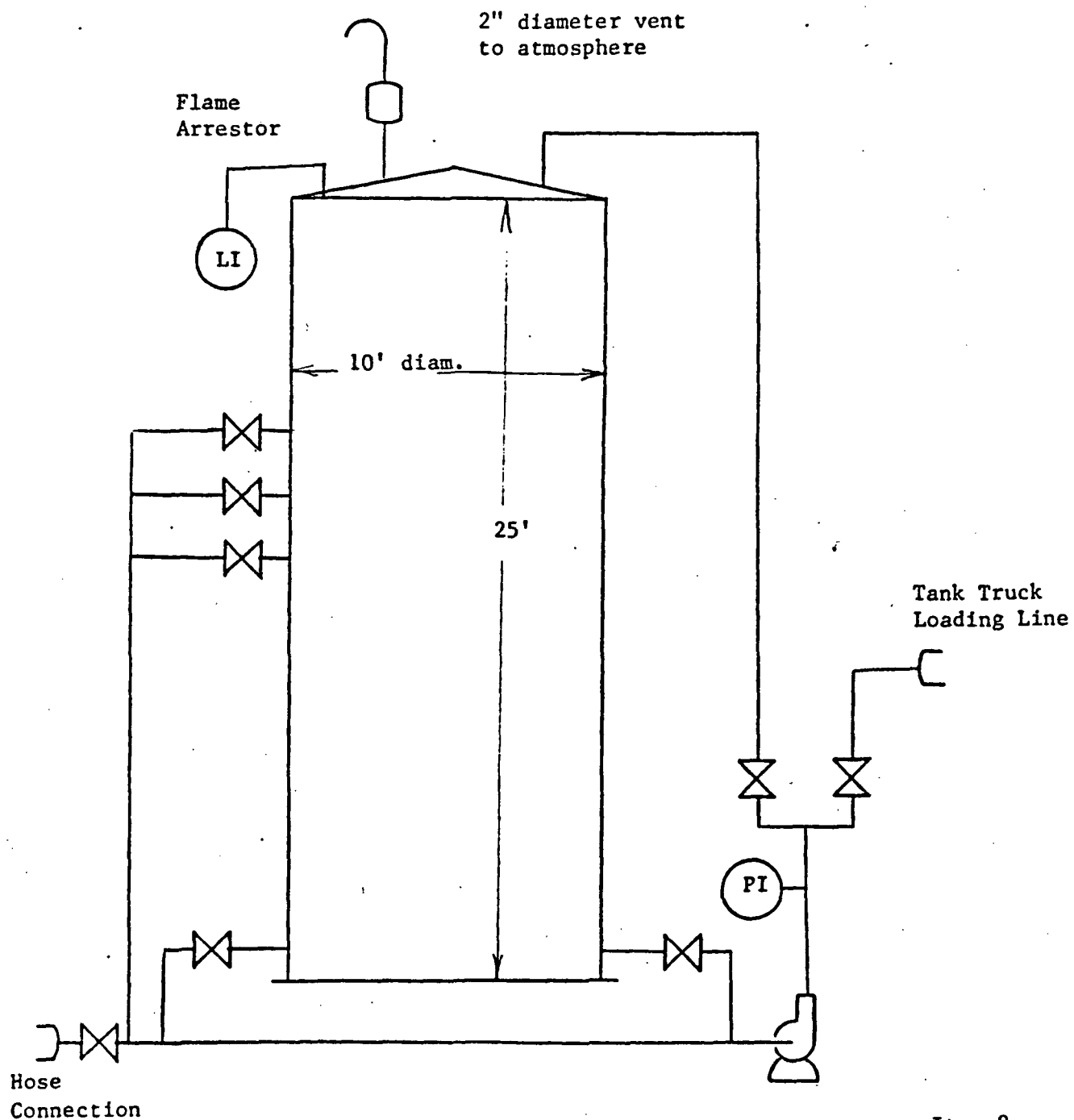
295.10	3289.40	144.67	152	3	144.67	314	3	56.23	152	3	56.23	314	3
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295.14	3289.48	134.61	152	3	134.61	314	3	52.47	152	3	52.47	314	3
295.16	3289.48	158.10	167	2	158.10	314	5	61.30	167	2	61.30	314	5
295.18	3289.48	200.23	167	2	200.23	314	5	77.67	167	2	77.67	314	5
295.20	3289.48	201.27	167	2	201.27	314	5	78.18	167	2	78.18	314	5
295.22	3289.48	220.81	76	21	220.81	80	6	85.59	76	21	85.59	80	6
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295.26	3289.48	310.45	1	5	310.45	3	5	120.42	1	5	120.42	3	5
295.28	3289.48	317.13	3	21	317.13	28	5	123.06	3	21	123.06	28	5
295.30	3289.48	346.29	1	4	346.29	71	22	134.43	1	4	134.43	71	22
295.32	3289.48	402.25	2	2	402.25	141	23	156.20	2	2	156.20	141	23
295.34	3289.48	437.87	2	3	437.87	86	23	171.30	2	3	171.30	86	23
295.36	3289.48	408.94	77	23	408.94	345	23	161.26	77	23	161.26	345	23
295.38	3289.48	349.03	151	5	295.39	147	2	136.57	151	5	116.87	147	2
295.40	3289.48	317.97	147	2	317.97	289	24	123.77	147	2	123.77	289	24
295.42	3289.48	311.13	22	7	207.51	41	5	120.96	22	7	80.68	41	5
295.44	3289.48	180.08	32	24	180.08	74	9	70.11	32	24	70.11	74	9
295.46	3289.48	149.83	30	24	149.83	147	1	58.83	30	24	58.83	147	1
295.48	3289.48	201.89	30	24	201.89	147	1	78.63	30	24	78.63	147	1
295.50	3289.48	200.51	30	24	200.51	147	1	77.88	30	24	77.88	147	1
295.52	3289.48	158.14	30	24	158.14	147	1	61.35	30	24	61.35	147	1
295.54	3289.48	109.15	30	24	109.15	147	1	42.33	30	24	42.33	147	1
295.56	3289.48	98.00	51	22	98.00	52	23	38.18	51	22	38.18	52	23
295.58	3289.48	96.61	51	22	96.61	52	23	37.58	51	22	37.58	52	23
295.10	3289.50	106.18	152	3	106.18	314	3	41.49	152	3	41.49	314	3
295.12	3289.50	129.11	167	2	129.11	314	5	50.08	167	2	50.08	314	5
295.14	3289.50	159.93	167	2	159.93	314	5	62.07	167	2	62.07	314	5
295.16	3289.50	171.64	167	2	171.64	314	5	66.68	167	2	66.68	314	5
295.18	3289.50	147.38	167	2	147.38	314	5	57.42	167	2	57.42	314	5
295.20	3289.50	198.51	76	21	198.51	80	6	77.00	76	21	77.00	80	6
295.22	3289.50	208.65	76	21	208.65	80	6	81.06	76	21	81.06	80	6
295.24	3289.50	234.62	1	5	234.62	3	5	90.94	1	5	90.94	3	5
295.26	3289.50	235.70	1	5	235.70	3	5	91.66	1	5	91.66	3	5
295.28	3289.50	298.97	3	21	298.97	28	5	116.13	3	21	116.13	28	5
295.30	3289.50	328.83	1	4	328.83	71	22	127.56	1	4	127.56	71	22
295.32	3289.50	347.09	2	2	347.09	141	23	135.14	2	2	135.14	141	23
295.34	3289.50	355.56	2	3	355.56	86	23	139.13	2	3	139.13	86	23
295.36	3289.50	350.82	77	23	350.82	345	23	137.92	77	23	137.92	345	23
295.38	3289.50	333.32	151	5	222.31	19	7	130.89	151	5	87.30	19	7
295.40	3289.50	301.87	147	2	301.87	289	24	118.26	147	2	118.26	289	24
295.42	3289.50	237.99	22	7	190.76	147	2	93.31	22	7	74.14	147	2
295.44	3289.50	235.31	22	7	156.94	41	5	91.48	22	7	61.01	41	5
295.46	3289.50	139.85	32	24	139.85	104	5	54.56	32	24	54.56	104	5
295.48	3289.50	132.61	32	24	132.61	104	5	51.52	32	24	51.52	104	5
295.50	3289.50	148.04	30	24	148.04	147	1	57.89	30	24	57.89	147	1
295.52	3289.50	172.03	30	24	172.03	147	1	66.97	30	24	66.97	147	1
295.54	3289.50	160.13	30	24	160.13	147	1	62.22	30	24	62.22	147	1
295.56	3289.50	129.20	30	24	129.20	147	1	50.15	30	24	50.15	147	1
295.58	3289.50	95.11	30	24	95.11	147	1	36.90	30	24	36.90	147	1
295.10	3289.52	131.78	167	2	131.78	314	5	51.16	167	2	51.16	314	5
295.12	3289.52	145.11	167	2	145.11	314	5	56.40	167	2	56.40	314	5
295.14	3289.52	138.62	167	2	138.62	314	5	53.99	167	2	53.99	314	5
295.16	3289.52	133.21	76	21	133.21	80	6	51.65	76	21	51.65	80	6
295.18	3289.52	178.17	76	21	178.17	80	6	69.14	76	21	69.14	80	6
295.20	3289.52	174.62	76	21	174.62	80	6	67.91	76	21	67.91	80	6
295.22	3289.52	189.98	1	5	189.98	3	5	73.69	1	5	73.69	3	5
295.24	3289.52	208.38	1	5	208.38	3	5	81.02	1	5	81.02	3	5
295.26	3289.52	233.51	3	21	233.51	28	5	90.60	3	21	90.60	28	5
295.28	3289.52	204.51	1	4	204.51	71	22	79.28	1	4	79.28	71	22
295.30	3289.52	255.11	1	4	255.11	71	22	99.51	1	4	99.51	71	22
295.32	3289.52	285.00	2	2	285.00	141	23	111.25	2	2	111.25	141	23
295.34	3289.52	294.33	2	3	294.33	86	23	115.16	2	3	115.16	86	23

295.45	3289.52	117.01	22	7	127.03	41	5	68.83	22	7	49.40	41	5
295.49	3289.52	117.06	32	24	117.06	104	5	45.72	32	24	45.72	104	5
295.50	3289.52	119.09	32	24	119.09	104	5	46.31	32	24	46.31	104	5
295.52	3289.52	109.20	30	24	109.20	147	1	42.50	30	24	42.50	147	1
295.54	3289.52	139.04	30	24	139.04	147	1	54.30	30	24	54.30	147	1
295.56	3289.52	145.41	30	24	145.41	147	1	56.62	30	24	56.62	147	1
295.58	3289.52	131.96	30	24	131.96	147	1	51.30	30	24	51.30	147	1
295.10	3289.54	124.61	167	2	124.61	314	5	48.53	167	2	48.53	314	5
295.12	3289.54	109.58	167	2	109.58	314	5	42.81	167	2	42.81	314	5
295.14	3289.54	130.46	76	21	130.46	80	6	50.62	76	21	50.62	80	6
295.16	3289.54	158.82	76	21	158.82	80	6	61.69	76	21	61.69	80	6
295.18	3289.54	149.34	76	21	149.34	80	6	58.17	76	21	58.17	80	6
295.20	3289.54	160.58	1	5	160.58	3	5	62.29	1	5	62.29	3	5
295.22	3289.54	188.70	1	5	188.70	3	5	73.34	1	5	73.34	3	5
295.24	3289.54	172.26	3	21	172.26	28	5	66.83	3	21	66.83	28	5
295.26	3289.54	207.33	3	21	207.33	28	5	80.70	3	21	80.70	28	5
295.28	3289.54	218.47	1	4	218.47	71	22	84.88	1	4	84.88	71	22
295.30	3289.54	180.73	2	2	180.73	141	23	70.57	1	4	70.57	71	22
295.32	3289.54	230.17	2	2	230.17	141	23	90.05	2	2	90.05	141	23
295.34	3289.54	247.57	2	3	247.57	84	23	96.84	2	3	96.84	86	23
295.36	3289.54	230.46	77	23	230.46	345	23	90.24	77	23	90.24	345	23
295.38	3289.54	182.63	77	23	182.63	345	23	71.62	77	23	71.62	345	23
295.40	3289.54	220.26	151	5	146.90	20	3	86.22	151	5	57.51	20	3
295.42	3289.54	208.91	147	2	208.91	289	24	81.85	147	2	81.85	289	24
295.44	3289.54	172.95	147	2	172.95	289	24	67.37	147	2	67.37	289	24
295.46	3289.54	175.23	22	7	126.56	41	5	68.44	22	7	49.43	41	5
295.48	3289.54	147.71	22	7	107.35	41	5	57.40	22	7	41.74	41	5
295.50	3289.54	100.06	32	24	100.06	104	5	39.12	32	24	39.12	104	5
295.52	3289.54	106.22	32	24	106.22	104	5	41.36	32	24	41.36	104	5
295.54	3289.54	87.14	32	24	87.14	104	5	33.86	32	24	33.86	104	5
295.56	3289.54	109.91	30	24	109.91	147	1	43.04	30	24	43.04	147	1
295.58	3289.54	124.91	30	24	124.91	147	1	48.74	30	24	48.74	147	1
295.10	3289.56	93.10	76	21	93.10	80	6	36.11	76	21	36.11	80	6
295.12	3289.56	124.31	76	21	124.31	80	6	48.26	76	21	48.26	80	6
295.14	3289.56	141.66	76	21	141.66	80	6	55.08	76	21	55.08	80	6
295.16	3289.56	129.83	76	21	129.83	80	6	50.64	76	21	50.64	80	6
295.18	3289.56	138.34	1	5	138.34	3	5	53.67	1	5	53.67	3	5
295.20	3289.56	168.48	1	5	168.48	3	5	65.49	1	5	65.49	3	5
295.22	3289.56	133.45	1	5	133.45	3	5	52.18	1	5	52.18	3	5
295.24	3289.56	187.69	3	21	187.69	28	5	72.92	3	21	72.92	28	5
295.26	3289.56	147.86	3	21	147.86	28	5	57.88	3	21	57.88	28	5
295.28	3289.56	204.86	1	4	204.86	71	22	79.79	1	4	79.79	71	22
295.30	3289.56	185.33	2	2	185.33	141	23	72.08	2	2	72.08	141	23
295.32	3289.56	189.73	2	2	189.73	141	23	74.36	2	2	74.36	141	23
295.34	3289.56	218.49	2	3	218.49	86	23	85.45	2	3	85.45	86	23
295.36	3289.56	189.41	77	23	189.41	345	23	74.10	77	23	74.10	345	23
295.38	3289.56	186.90	77	23	186.90	345	23	73.27	77	23	73.27	345	23
295.40	3289.56	206.20	151	5	137.53	20	3	80.77	151	5	53.87	20	3
295.42	3289.56	148.53	147	2	148.53	289	24	58.33	147	2	58.33	289	24
295.44	3289.56	188.79	147	2	188.79	289	24	73.73	147	2	73.73	289	24
295.46	3289.56	125.35	147	2	125.35	289	24	48.76	147	2	48.76	289	24
295.48	3289.56	154.32	22	7	112.87	41	5	60.19	22	7	44.05	41	5
295.50	3289.56	125.79	22	7	92.49	41	5	48.90	22	7	35.98	41	5
295.52	3289.56	86.93	32	24	86.93	104	5	34.02	32	24	34.02	104	5
295.54	3289.56	94.76	32	24	94.76	104	5	36.94	32	24	36.94	104	5
295.56	3289.56	83.07	32	24	83.07	104	5	32.31	32	24	32.31	104	5
295.58	3289.56	86.51	30	24	86.51	147	1	33.95	30	24	33.95	147	1
295.10	3289.58	116.71	76	21	116.71	80	6	45.34	76	21	45.34	80	6
295.12	3289.58	126.82	76	21	126.82	80	6	49.35	76	21	49.35	80	6
295.14	3289.58	114.36	76	21	114.36	80	6	44.65	76	21	44.65	80	6
295.16	3289.58	120.97	1	5	120.97	3	5	46.95	1	5	46.95	3	5
295.18	3289.58	150.02	1	5	150.02	3	5	58.33	1	5	58.33	3	5
295.20	3289.58	133.36	1	5	133.36	3	5	52.07	1	5	52.07	3	5

295.32	3289.58	138.76	2	4	196.47	86	23	62.66	2	2	62.66	141	23
295.34	3289.58	196.47	2	3	196.47	86	23	76.81	2	3	76.81	86	23
295.36	3289.58	159.20	77	23	159.20	345	23	62.21	77	23	62.21	345	23
295.38	3289.58	184.10	77	23	184.10	345	23	72.09	77	23	72.09	345	23
295.40	3289.58	173.74	151	5	115.09	20	3	68.04	151	5	45.38	20	3
295.42	3289.58	163.42	151	5	109.00	20	3	63.85	151	5	42.58	20	3
295.44	3289.58	163.69	147	2	163.69	289	24	64.10	147	2	64.10	289	24
295.46	3289.58	155.38	147	2	155.38	289	24	60.59	147	2	60.59	289	24
295.48	3289.58	121.38	22	7	91.64	147	2	47.54	22	7	35.63	147	2
295.50	3289.58	135.79	22	7	100.45	41	5	52.95	22	7	39.19	41	5
295.52	3289.58	108.80	22	7	80.88	41	5	42.31	22	7	31.47	41	5
295.54	3289.58	76.52	32	24	76.52	104	5	29.96	32	24	29.96	104	5
295.56	3289.58	84.82	32	24	84.82	104	5	33.09	32	24	33.09	104	5
295.58	3289.58	78.01	32	24	78.01	104	5	30.37	32	24	30.37	104	5
295.10	3289.60	114.07	76	21	114.07	80	6	44.43	76	21	44.43	80	6
295.12	3289.60	101.83	76	21	101.83	80	6	39.79	76	21	39.79	80	6
295.14	3289.60	107.08	1	5	107.08	3	5	41.57	1	5	41.57	3	5
295.16	3289.60	133.91	1	5	133.91	3	5	52.07	1	5	52.07	3	5
295.18	3289.60	128.37	1	5	129.37	3	5	50.09	1	5	50.09	3	5
295.20	3289.60	122.81	3	21	122.81	28	5	47.68	3	21	47.68	28	5
295.22	3289.60	154.16	3	21	154.16	28	5	60.00	3	21	60.00	28	5
295.24	3289.60	122.92	3	21	122.92	28	5	48.15	3	21	48.15	28	5
295.26	3289.60	164.41	1	4	164.41	71	22	63.98	1	4	63.98	71	22
295.28	3289.60	138.56	1	4	138.56	71	22	54.29	1	4	54.29	71	22
295.30	3289.60	173.27	2	2	173.27	141	23	67.54	2	2	67.54	141	23
295.32	3289.60	135.84	2	2	135.84	141	23	53.32	2	2	53.32	141	23
295.34	3289.60	178.28	2	3	178.28	86	23	69.68	2	3	69.68	86	23
295.36	3289.60	135.12	77	23	135.12	345	23	52.76	77	23	52.76	345	23
295.38	3289.60	174.06	77	23	174.06	345	23	68.13	77	23	68.13	345	23
295.40	3289.60	138.53	151	5	107.72	77	23	54.24	151	5	42.14	77	23
295.42	3289.60	165.30	151	5	110.25	20	3	64.65	151	5	43.12	20	3
295.44	3289.60	123.14	147	2	123.14	289	24	48.29	147	2	48.29	289	24
295.46	3289.60	154.88	147	2	154.88	289	24	60.53	147	2	60.53	289	24
295.48	3289.60	123.27	147	2	123.27	289	24	48.03	147	2	48.03	289	24
295.50	3289.60	115.49	22	7	85.93	41	5	45.17	22	7	33.63	41	5
295.52	3289.60	119.86	22	7	89.62	41	5	46.72	22	7	34.95	41	5
295.54	3289.60	95.32	22	7	71.60	41	5	37.07	22	7	27.86	41	5
295.56	3289.60	68.09	32	24	68.09	104	5	26.66	32	24	26.66	104	5
295.58	3289.60	76.28	32	24	76.28	104	5	29.78	32	24	29.78	104	5
295.10	3289.62	91.49	76	21	91.49	80	6	35.77	76	21	35.77	80	6
295.12	3289.62	95.75	1	5	95.75	3	5	37.18	1	5	37.18	3	5
295.14	3289.62	120.05	1	5	120.05	3	5	46.68	1	5	46.68	3	5
295.16	3289.62	121.13	1	5	121.13	3	5	47.24	1	5	47.24	3	5
295.18	3289.62	96.43	3	21	96.43	28	5	37.43	3	21	37.43	28	5
295.20	3289.62	135.07	3	21	135.07	28	5	52.52	3	21	52.52	28	5
295.22	3289.62	133.09	3	21	133.09	28	5	51.96	3	21	51.96	28	5
295.24	3289.62	126.06	1	4	126.06	71	22	48.99	1	4	48.99	71	22
295.26	3289.62	152.22	1	4	152.22	71	22	59.37	1	4	59.37	71	22
295.28	3289.62	118.01	2	2	118.01	141	23	45.88	2	2	45.88	141	23
295.30	3289.62	160.30	2	2	160.30	141	23	62.56	2	2	62.56	141	23
295.32	3289.62	116.64	2	2	116.64	141	23	45.80	2	2	45.80	141	23
295.34	3289.62	163.00	2	3	163.00	86	23	63.71	2	3	63.71	86	23
295.36	3289.62	117.42	2	3	117.42	86	23	46.05	2	3	46.05	86	23
295.38	3289.62	160.74	77	23	160.74	345	23	62.89	77	23	62.89	345	23
295.40	3289.62	118.80	77	23	118.80	345	23	46.48	77	23	46.48	345	23
295.42	3289.62	152.79	151	5	101.90	20	3	59.78	151	5	39.87	20	3
295.44	3289.62	126.71	151	5	84.94	147	2	49.48	151	5	33.33	147	2
295.46	3289.62	133.51	147	2	133.51	289	24	52.26	147	2	52.26	289	24
295.48	3289.62	135.62	147	2	135.62	289	24	52.94	147	2	52.94	289	24
295.50	3289.62	96.74	147	2	96.74	289	24	37.67	147	2	37.67	289	24
295.52	3289.62	107.80	22	7	81.05	41	5	42.13	22	7	31.69	41	5
295.54	3289.62	106.35	22	7	80.32	41	5	41.45	22	7	31.32	41	5
295.56	3289.62	84.39	22	7	64.01	41	5	32.83	22	7	24.92	41	5

295.18	3289.64	113.82	3	21	113.82	28	5	44.24	3	21	44.24	28	5
295.20	3289.64	129.10	3	21	129.10	28	5	50.32	3	21	50.32	28	5
295.22	3289.64	104.41	3	21	104.41	28	5	40.91	3	21	40.91	28	5
295.24	3289.64	132.50	1	4	132.50	71	22	51.56	1	4	51.56	71	22
295.26	3289.64	133.26	1	4	133.26	71	22	52.08	1	4	52.08	71	22
295.28	3289.64	123.09	2	2	123.09	141	23	47.90	2	2	47.90	141	23
295.30	3289.64	146.35	2	2	146.35	141	23	57.17	2	2	57.17	141	23
295.32	3289.64	112.47	2	3	112.47	86	23	43.81	2	3	43.81	86	23
295.34	3289.64	149.96	2	3	149.96	86	23	58.61	2	3	58.61	86	23
295.36	3289.64	113.19	2	3	113.19	86	23	44.36	2	3	44.36	86	23
295.38	3289.64	146.53	77	23	146.53	345	23	57.31	77	23	57.31	345	23
295.40	3289.64	123.79	77	23	123.79	345	23	48.43	77	23	48.43	345	23
295.42	3289.64	133.47	151	5	89.02	20	3	52.23	151	5	34.83	20	3
295.44	3289.64	133.10	151	5	88.78	20	3	52.02	151	5	34.69	20	3
295.46	3289.64	104.47	147	2	104.47	289	24	40.93	147	2	40.93	289	24
295.48	3289.64	129.55	147	2	129.55	289	24	50.65	147	2	50.65	289	24
295.50	3289.64	114.24	147	2	114.24	289	24	44.56	147	2	44.56	289	24
295.52	3289.64	83.46	22	7	76.05	147	2	37.69	22	7	29.60	147	2
295.54	3289.64	99.64	22	7	75.64	41	5	38.91	22	7	29.56	41	5
295.56	3289.64	94.90	22	7	72.36	41	5	36.98	22	7	28.21	41	5
295.58	3289.64	75.39	22	7	57.72	41	5	29.33	22	7	22.47	41	5

B-32 Capacity: 15,076 Gallons
 Diameter: 10 Feet
 Height: 25 Feet
Paint Color: White
Composition: Carbon Steel
Average Annual Operating Temperature: 80°F
Turnovers per year: 2.7 Maximum
For waste composition, see emissions calculation.



WO-6

Capacity: 25,320 Gallons

Diameter: 15 Feet

Height: 19'3"

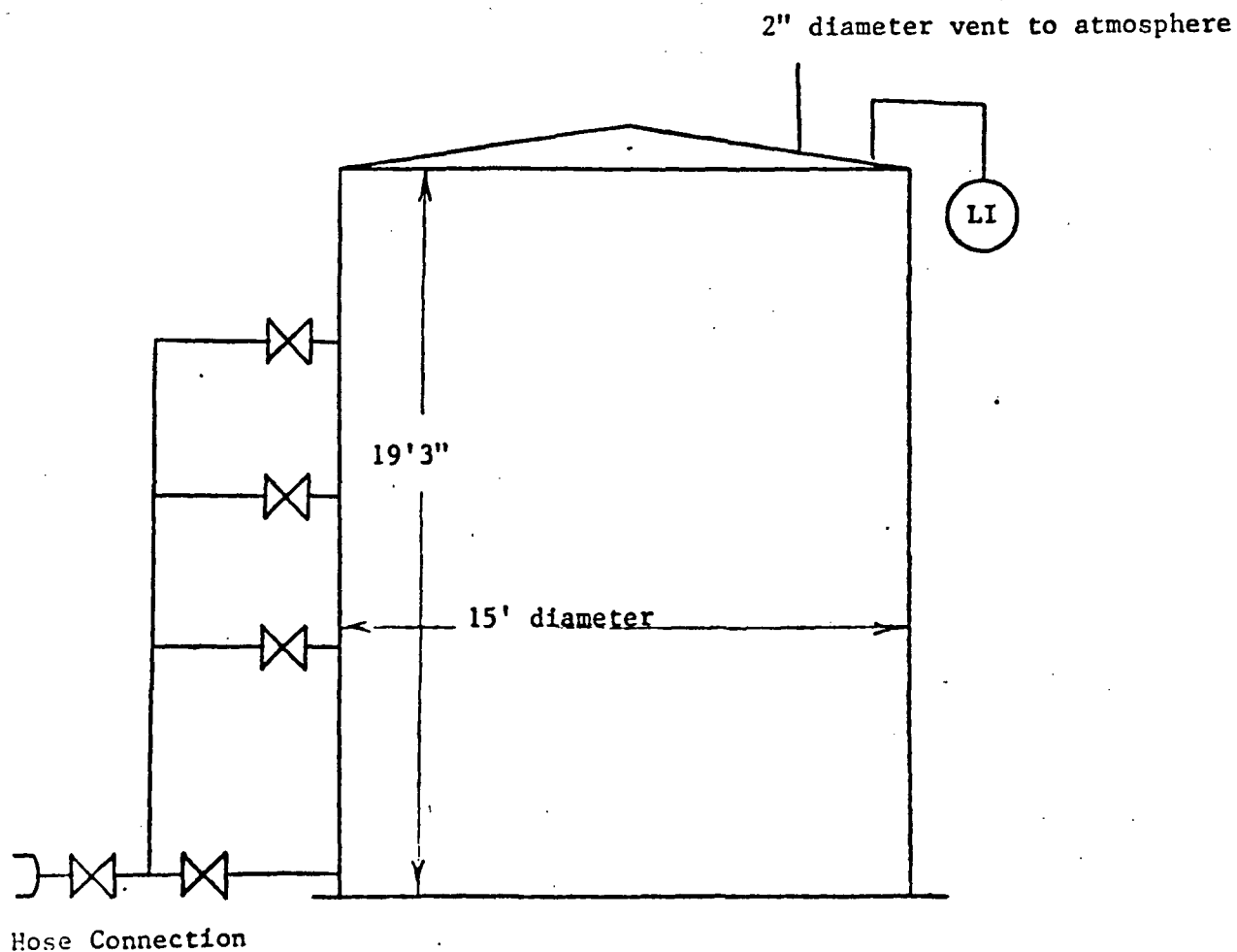
Paint Color: White

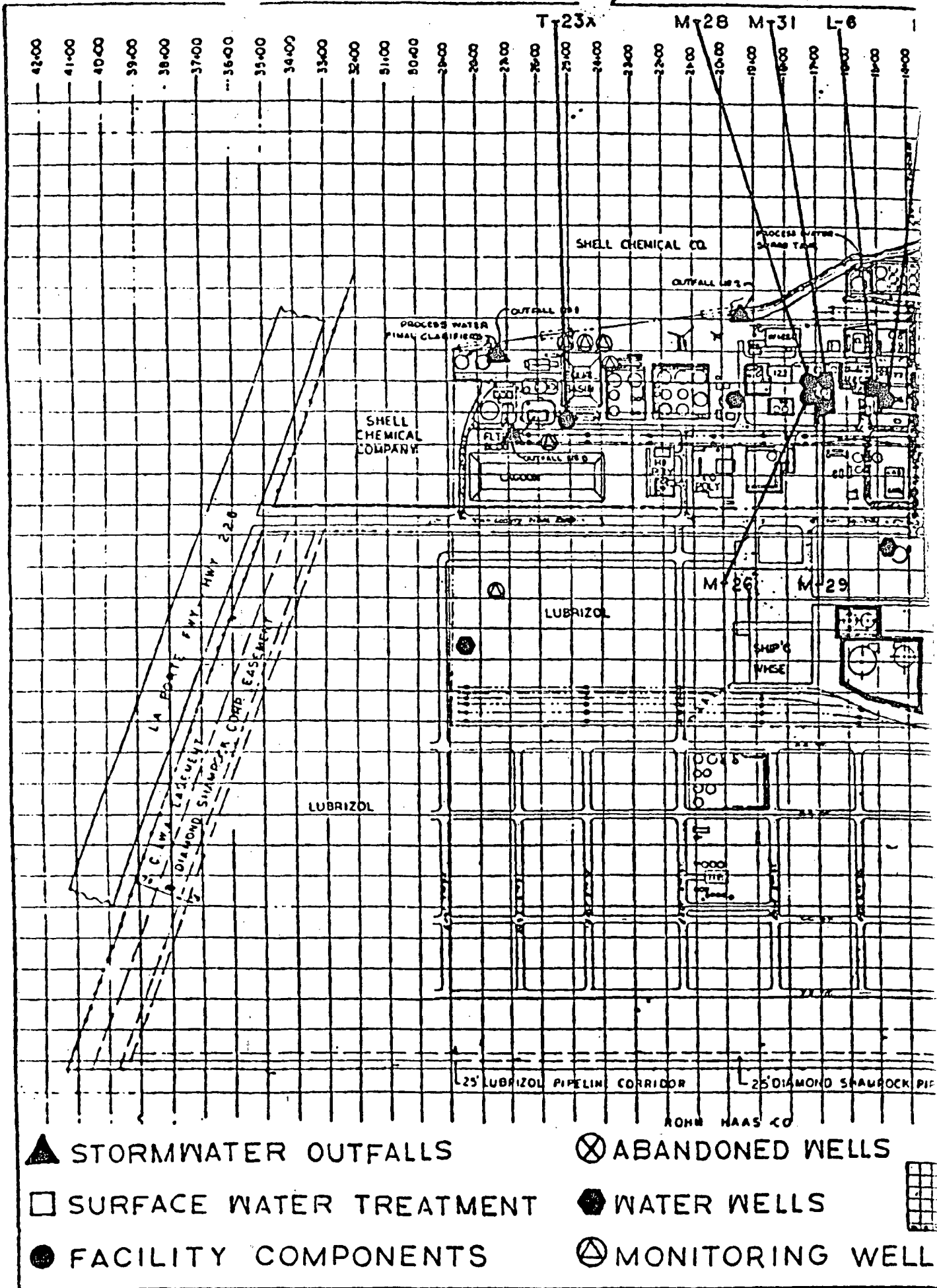
Composition: Carbon Steel

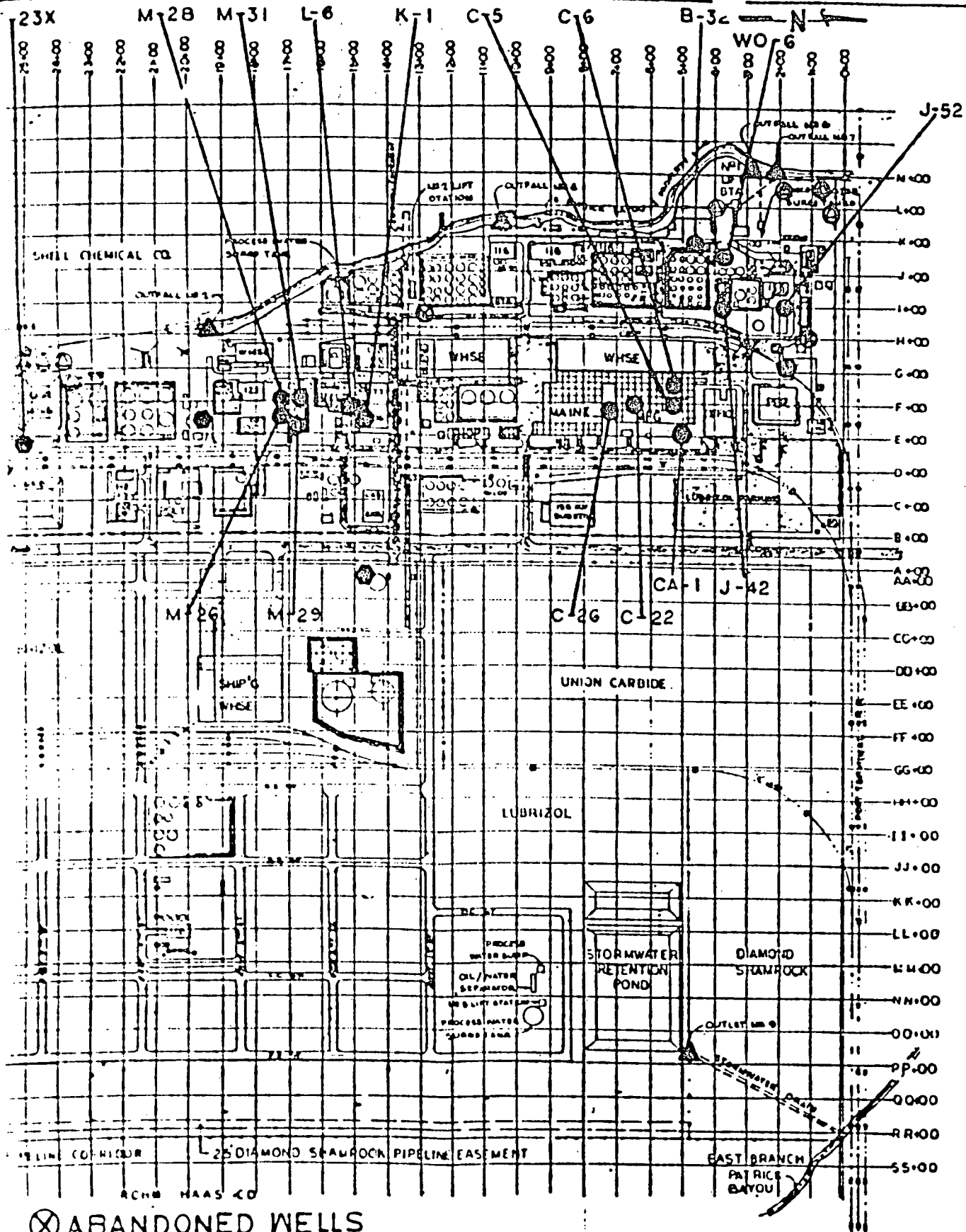
Average Annual Operating Temperature: 80°F

Turnovers per year: 1.6 Maximum

For waste composition, see emissions calculation.







⊗ ABANDONED WELLS

● WATER WELLS

⊙ MONITORING WELLS

THE LOCATION COORDINATING			
WATER DISCHARGE SYSTEM			
DATE	BY	REVIEWED	APPROVED
11/11/81	J. H. H.	J. H. H.	J. H. H.

PLC 9-6712-003

TANK DESIGN REPORT

Tank Designation: WO-6

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM-615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank was strengthened when constructed using ASTM 36A carbon steel plate. The tank shell is 0.180" thick.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank roof.

The liquid contained in the tank has a typical specific gravity of 0.9. Attachment 5 shows piping, instrumentation, and flows associated with tank WO-6.

2. Compatibility and Material of Construction Properties

Based on technical information supplied by Ryerson Steel Co., ASTM 36A carbon steel plate has excellent corrosion rates when exposed to Methyl ethyl ketones, miscellaneous alcohols and low molecular hydrocarbons. Therefore, the hazardous waste are compatible with materials of construction.

ASTM 36A Carbon Steel Plate Properties

Tensile Strength	58-80 KSI
Yield Strength	36 KSI min.
Elongation at 2"	23%
Elongation at 8"	20%
Brinell Hardness	137

3. Overfill and Spill Control

The tank is equipped with a manometer which is used to measure the amount of liquid in the tank. Operating procedures have been established whereby 75% of the tank volume is not exceeded. The tank level is gauged twice a day.

If a tank leak or rupture would develop, material would flow into the process drain with an ultimate destination of the #1 lift station. From the #1 lift station, the material would be pumped to E-1 or E-2. E-1 and E-2 are two 110,160 gallon carbon steel tanks which can be used in an immediate response to a spill.

4. Special Requirements for Reactive Waste

No reactive wastes are placed in tank WO-6.

5. Special Requirements for Reactive Waste

Materials stored in tank WO-6 are ignitable having a flash point of less than 140°F.

Following are procedures used to add:

- A. The ignitable waste is pumped to the tank from vacuum tracks that collect miscellaneous organic materials from the process and laboratory collection areas.
- B. The addition of the waste causes no reaction or generation of heat, toxic mists, fumes or gases in sufficient quantities to threaten human health or the environment.
- C. The ignitable waste is stored in tank WO-6 in such a way that it is protected from conditions which may cause the waste to ignite. The area where WO-6 is located is a no smoking area. A "hot work" permit system is used at the plant to ensure that no ignition sources are heated that may ignite the waste.

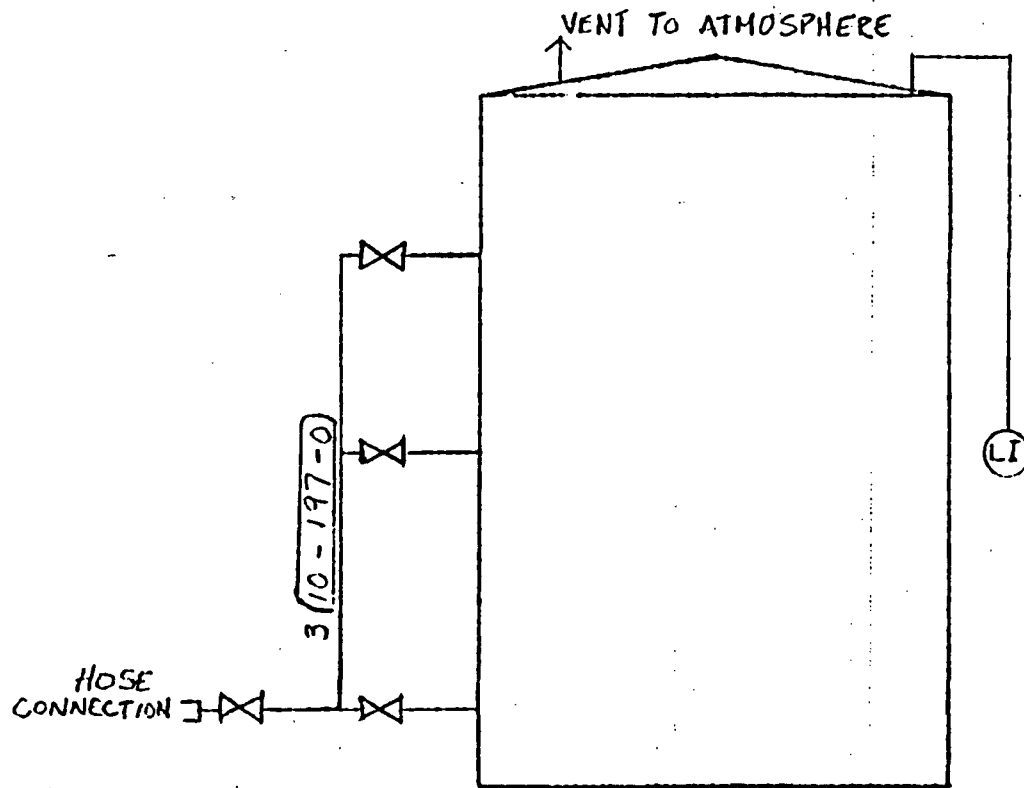
6. Tank Inspection Procedures

The tank is equipped with a manometer which is used to measure the liquid level in the tank twice a day.

Visual inspections of the tank shell exterior are made weekly. The shell is examined for evidence of corrosion of leaks. Special attention is given to seams in the tank shell.

The tank shell thickness is ultrasonically checked annually by a metallurgical consultant.

ATTACHMENT 5 WO-6 PIPING AND INSTRUMENTATION DIAGRAM



BY _____	DATE _____	SUBJECT _____	SHEET NO. _____ OF _____
CHKD. BY _____	DATE _____		JOB NO. _____

ATTACHMENT 5
CONT.

1. WO-6 Dimensions

Diameter 15 ft.
Height 19 ft. 3 in.

2. WO-6 Wall Thickness - 0.180 in.

3. Tank, piping, and valves materials of construction - Carbon Steel

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Schedule</u>
3-(10-197-0)	3 in.	40

TANK DESIGN REPORTTank Designation: CA-11. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM-615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank shell is 0.375"* thick and rests on the tank foundation pad.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank roof.

The liquid contained in the tank has a typical specific gravity of 1.2. Attachment 4 shows piping, instrumentation, and flows associated with tank CA-1.

2. Compatibility and Material of Construction Properties

Based on literature supplied by Dow Chemical on the Derakane Vinyl Ester Resins, Derakane 470 has a maximum recommended service temperature of 210°F for sodium sulfite solutions. This maximum service temperature was determined by field or laboratory testing in accordance with ASTM C581-68. Since this tank is maintained at ambient temperatures, the hazardous waste managed in the tank is compatible with the material of construction.

Derakane 470-36 Resin Properties

Monomeric Styrene	36%
Tensile Strength	10-11, 000 PSI
Tensile Modulus	5.1×10^{-5} PSI
Elongation	3.0%
Flexural Strength	18-20,000 PSI
Flexural Modulus	5.5×10^{-5} PSI
Heat Distortion Temperature	295-305°F
Barcol Hardness	40

3. Overfill and Spill Control

The tank is equipped with a high level alarm that activates an audible alarm which can be heard in the process area.

When the alarm sounds, an investigation is made and the flow of material to the tank is shut off, if necessary. Operating procedures have been established whereby 75% of the tank volume is not exceeded. The tank level is gauged twice a day.

Tank CA-1 is surrounded by a 3 foot high concrete retaining wall. Valves that drain the diked area are kept closed at all time. Any spilled material will be vacuumed up and placed in CA-1, J-42 or disposed of off-site. See attached blue print for diked area dimensions and specifications.

4. Special Requirement for Ignitable or Reactive Wastes

No ignitable or reactive wastes are placed in tank CA-1.

5. Tank Inspection Procedures

The tank is equipped with a level transmitter which is used to measure the liquid level in the tank twice a day.

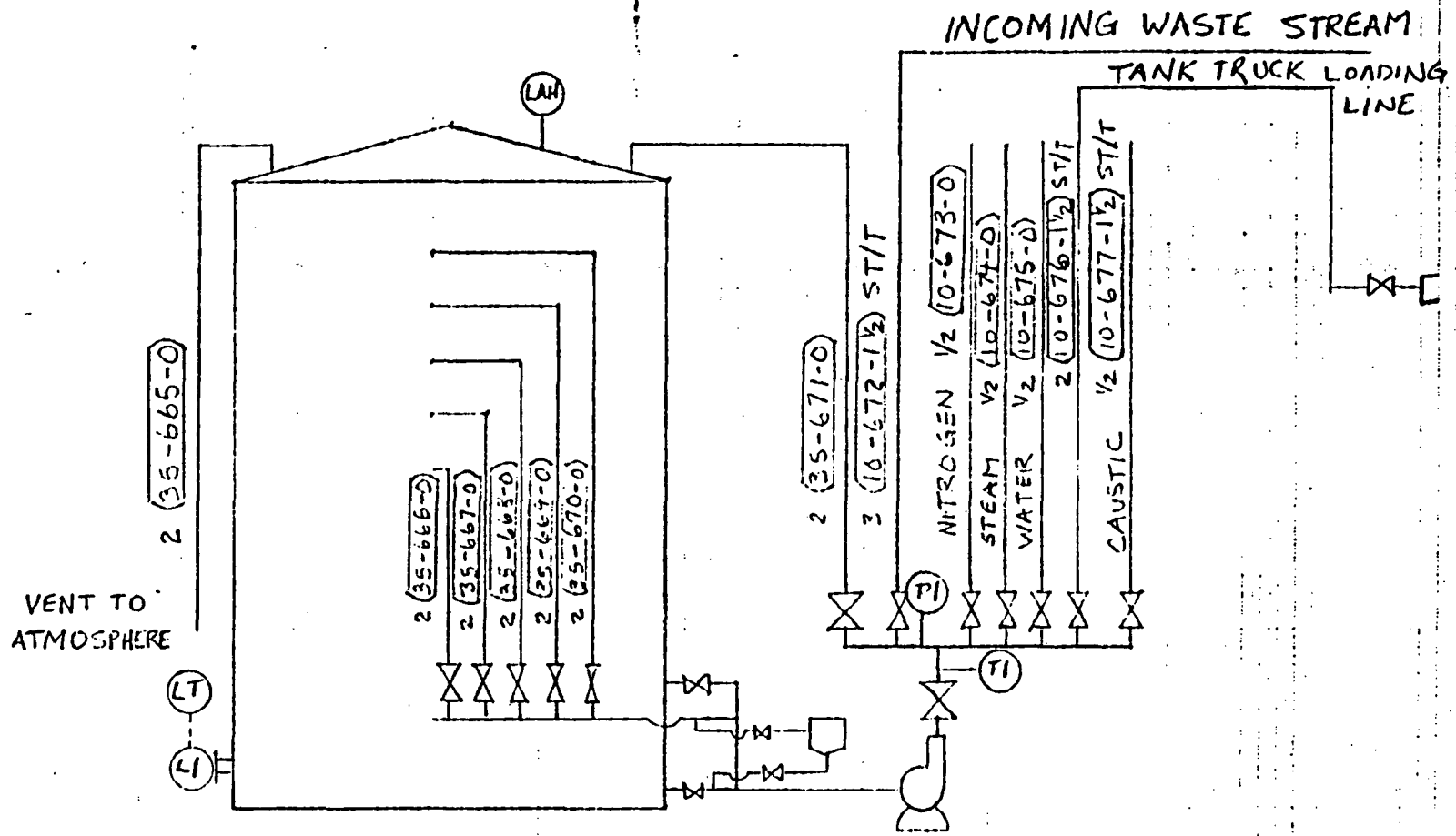
Visual inspections of the tank shell exterior are made weekly. The shell is examined for evidence of leaks or tears. Special attention is given to seams in the tank shell.

High level alarms are inspected semi-annually.

FGH/dt
FGH02

*When constructed.

ATTACHMENT 4 CA-1 PIPING AND INSTRUMENTATION DIAGRAM



ATTACHMENT 4
CONT.

1. CA-1 Dimensions

Diameter 12 ft.
Height 25 ft. 3 in.

2. CA-1 Wall Thickness - 0.375 in. (When Constructed)

3. Tank, piping, and valves materials of construction.

Tank and tank piping - Derkane 470
Process piping - Carbon Steel
Tank valving - Carbon Steel
Process valving - Carbon Steel

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Rating/Schedule</u>
35-665-0	2	150 PSI
35-666-0	2	150 PSI
35-667-0	2	150 PSI
35-668-0	2	150 PSI
35-669-0	2	150 PSI
35-670-0	2	150 PSI
35-671-0	2	150 PSI
10-672-1-1/2 ST/T	3	40
10-673-0	1/2	40
10-674-1-1/2 IPP	1/2	40
10-675-0	1/2	40
10-676-1-1/2 ST/T	2	40
10-677-1-1/2 ST/T	1/2	40

ATTACHMENT IX
TANK DESIGN REPORT

Tank Designation: J-42

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel conforming to ASTM-615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank shell is 0.375" thick and rests on the tank foundation pad.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank floor.

The liquid contained in the tank has a typical specific gravity of 1.2. Attachment 3 shows piping, instrumentation, and flows associated with tank J-42.

2. Compatibility and Material of Construction Properties

Based on literature supplied by Dow Chemical on the Derakane Vinyl Ester Resins, Derakane 470 has a maximum recommended service temperature of 210°F for sodium sulfite solutions. This maximum service temperature was determined by field or laboratory testing in accordance with ASTM C581-68. Since this tank is maintained at ambient temperatures, the hazardous waste managed in the tank is compatible with the material of construction.

Derakane 470-36 Resin Properties

Monomeric Styrene	36%
Tensile Strength	10-11, 000 PSI
Tensile Modulus	5.1×10^{-5} PSI
Elongation	3.0%
Flexural Strength	18-20,000 PSI
Flexural Modulus	5.5×10^{-5} PSI
Heat Distortion Temperature	295-305°F
Barcol Hardness	40

3. Overfill and Spill Control

The tank is equipped with a high level alarm that activates an audible alarm which can be heard in the process area. When the alarm sounds, an investigation is made and the flow of material to the tank is shut off, if necessary. Operating procedures have been established whereby 75%

of the tank volume is not exceeded. The tank level is gauged twice a day.

Tank J-42 is surrounded by a 4 1/2 foot high concrete retaining wall. Valves that drain the diked area are kept closed at all times. Any spilled material will be vacuumed up and placed in J-42, CA-1 or disposed of off-site. See attached blue print for diked area dimensions and specifications.

4. Special Requirement for Ignitable or Reactive Wastes

No ignitable or reactive wastes are placed in tank J-42.

5. Tank Inspection Procedures

The tank is equipped with a manometer which is used to measure the liquid level in the tank twice a day.

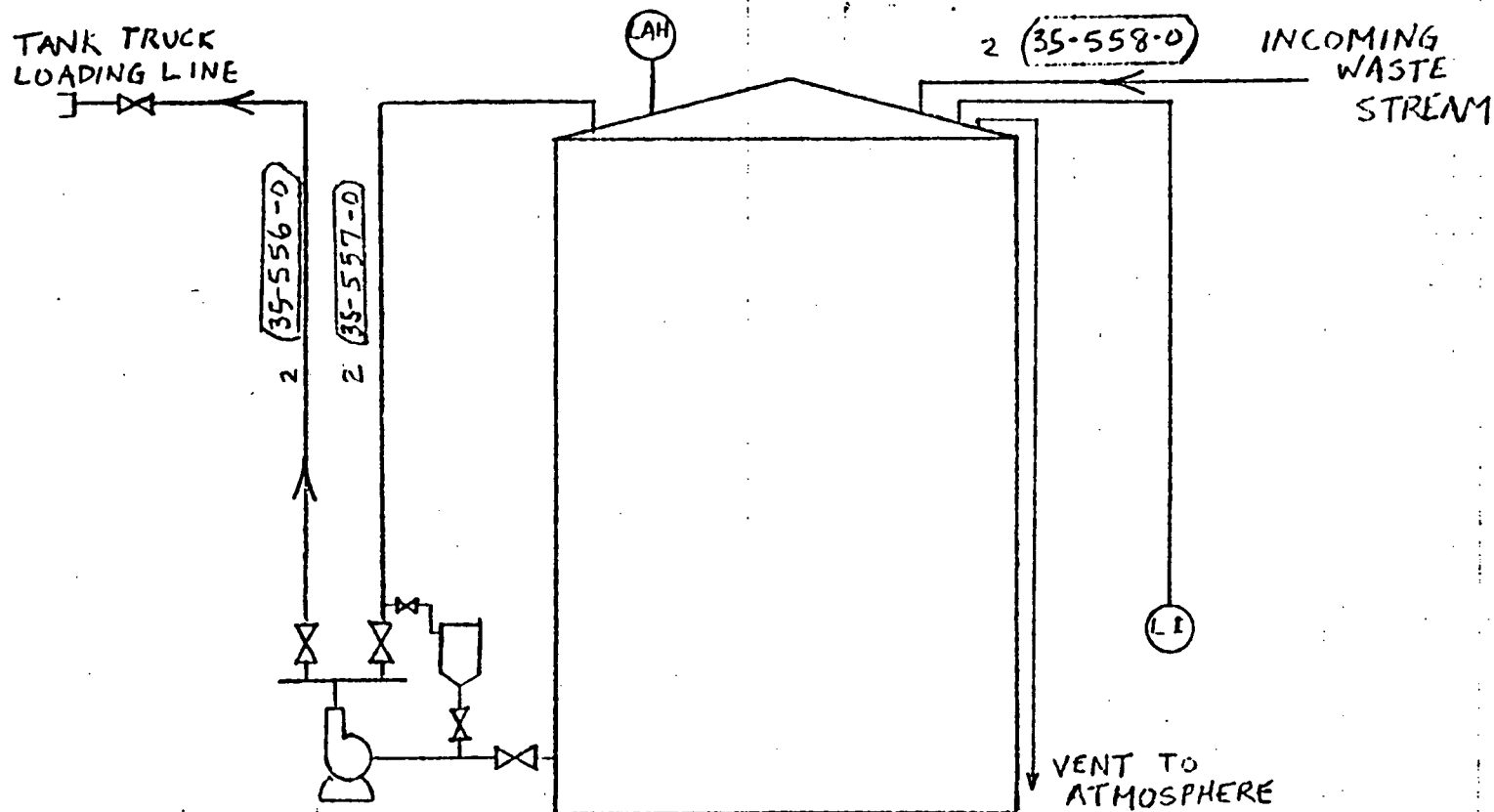
Visual inspections of the tank shell exterior area are made weekly. The shell is examined for evidence of leaks or tears. Special attention is given to seams in the tank shell.

High level alarms are inspected semi-annually.

FGH/dt
FGH03

*When constructed.

ATTACHMENT 3
J-42 PIPING AND INSTRUMENTATION DIAGRAM



BY _____ DATE _____
CHKD. BY _____ DATE _____

SUBJECT _____

SHEET NO. _____ OF _____
JOB NO. _____

ATTACHMENT 3
CONT.

1. J-42 Dimensions

Diameter 10 ft.

Height 17 ft.

2. J-42 Wall Thickness - 0.375 in. (When constructed)

3. Tank, piping, and valves materials of construction.

Tank and piping - Derkane 470

Valves - Glass-lined

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Rating</u>
2(35-556-0)	2 in.	150 PSI
2(35-557-0)	2 in.	150 PSI
2(35-558-0)	2 in.	150 PSI

TANK DESIGN REPORT

Tank Designation: B-32

1. Strength

Tank foundation consists of a 4" - thick mastic - coated concrete pad. The concrete is reinforced with deformed billet steel confirming to ASTM - 615, grade 40, and has a compressive strength of 3,000 psi minimum.

The tank shell is 0.385" thick and rests on the tank foundation pad.

To prevent pressure build-up or vacuum inside the tank, the tank is vented from the tank roof.

The liquid contained in the tank has a typical specific gravity of 0.9. Attachment 2 shows piping, instrumentation, and flows associated with tank B-32.

2. Compatibility and Material of Construction Properties

See metallurgical consultant tank design report. Attachment 13.

3. Overfill and Spill Control

The tank is equipped with a manometer which is used to measure the amount of liquid in the tank. Operating procedures have been established whereby 75% of the tank volume is not exceeded. The tank level is gauged twice a day.

If a tank leak or rupture would develop, material would flow into the process drain with an ultimate destination of the #1 lift station. From the #1 lift station, the material would be pumped to E-1 or E-2. E-1 and E-2 are two 110,160 gallon carbon steel tanks which can be used in an immediate response to a spill.

4. Special Requirements for Reactive Waste

No reactive wastes are placed in tank B-32.

5. Special Requirements for Ignitable Wastes

Materials stored in tank B-32 are ignitable having a flash point of less than 140°F.

Following are procedures used to add:

- A. The ignitable waste is pumped to the tank from vacuum trucks that collect miscellaneous organic materials from the process and laboratory collection areas.

- B. The addition of the waste causes no reaction or generation of heat, toxic mists, fumes or gases in sufficient quantities to threaten human health or the environment.
- C. The ignitable waste is stored in tank B-32 in such a way that it is protected from conditions which may cause the waste to ignite. The area where B-32 is located is a no smoking area. A "hot work" permit system is used at the plant to ensure that no ignition sources are heated that may ignite the waste.

6. Tank Inspection Procedures

The tank is equipped with a manometer which is used to measure the liquid level in the tank twice a day.

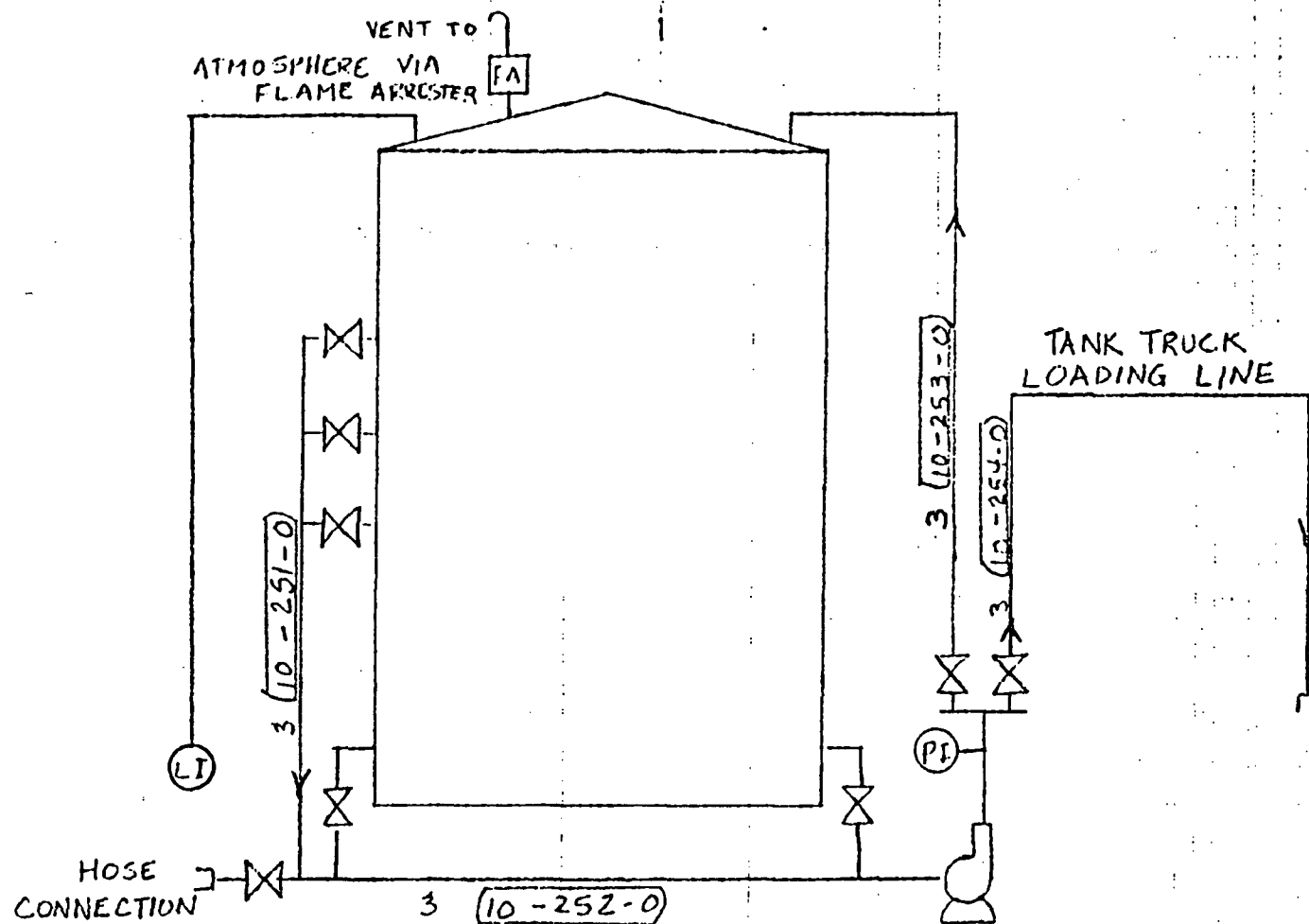
Visual inspections of the tank shell exterior are made weekly. The shell is examined for evidence of corrosion or leaks. Special attention is given to seams in the tank shell.

The tank shell thickness is ultrasonically checked annually by use of a metallurgical consultant.

FGH/dt
FGHB32

ATTACHMENT 2

P-32 PIPING AND INSTRUMENTATION DIAGRAM



BY _____ DATE _____
CHKD. BY _____ DATE _____

SUBJECT _____

SHEET NO. _____ OF _____
JOB NO. _____

ATTACHMENT 2
CONT.

1. B-32 Dimensions

Diameter 10 ft.
Height 25 ft.

2. B-32 Wall Thickness - .385 in.

3. Tank, piping and valves materials of construction - Carbon Steel

4. Line Schedule

<u>Line Number</u>	<u>Size</u>	<u>Rating/Schedule</u>
3(10-251-0)	3 in.	40
3(10-252-0)	3 in.	40
3(10-253-0)	3 in.	40
3(10-254-0)	3 in.	40

EDWARD L. HAILE AND ASSOCIATES, INC.

Chemistry - Metallurgy - Corrosion - NDT



9934 SWEETWATER
P. O. BOX 38523
HOUSTON, TEXAS 77238
TELEPHONE: 713 - 448-9725

Evaluation of
Waste Solvents Storage Tank
B-32

for

Mr. Frank G. Hejtmanek
RCRA Coordinator
Lubrizol Corporation
P.O. Box 158
Deer Park, Texas 77536

Job No: 840546
Date: July 10, 1984

by

EDWARD L. HAILE AND ASSOCIATES, INC.

William J. Arnoult III. Ph.D. P.E.
President

WJA/mlb

Description:

The tank presently under evaluation is referred to as tank B-32 at the Lubrizol Corporation, Deer Park Plant. The tank is a four course, double riveted lap joint construction ("L2") with a conical roof and bottom and a 2' skirt. (See photo). The tank is presently in use as a storage vessel for waste hydrocarbon solvents.

The dimensions of the tank are as follows.

Inside diameter	10 feet
Height	25'
Capacity: Total	15076 gal.
bottom cone	38 gal.
per inch	48.96 gal.

Visual Examination and Thickness Survey:

The tank is presently on a concrete foundation. There was observed no seepage from any of the seams, bottom, rivets or nozzle gaskets. The foundation was intact with no noticable cracking.

The rivets are on 2½" centers. The rivet diameter was not able to be measured nor was it known, but is estimated to be ¾" from the size of the heads.

A thickness survey of the tank plate indicated it to be a nominal 3/8" averaging 0.377" with the thinnest thickness being 0.365". There was found no exception-ally thin, corroded or pitted areas.

Design and Strength Characteristics:

A sample of the tank plate large enough for mechanical testing and chemical analysis was not able to be removed from the tank. Consequently, it was decided to make all calculations based on the assumption that the tank is made of material with the least structural properties. Material in this class would be, for example, ASTM A283 Grade A plate with the following properties.

Yield Strength	> 24,000 psi
Tensile Strength	45,000 - 55,000 psi
Elongation	> 30%
Reduction of Area	- - - - -

Assuming the tank is filled with water at ambient temperature, the following forces pertain.

Gage pressure at bottom	10 psi
Max Fiber Stress in plate	1643 psi
Max Load on vertical seam	616 lbs/inch

(cont'd)

Corrosion Rate:

It was reported that there is always a mixture of various hydrocarbon solvents in the tank. Although, in general, solvents are relatively non corrosive to mild steel, the halogenated hydrocarbon solvents, for example Carbon Tetrachloride and hexachlorobenzene can have corrosion rates as high as 0.050" per year in the presence of moisture which hydrolyzes these solvents. However, assuming that these type solvents will not likely occur in high concentrations, a more reasonable predicted corrosion rate would be in the range of 0.002" → 0.015" per year. At this rate, it will take approximately 15-18 years to diminish the wall to the minimum allowable thickness of 3/16".


Conclusion - Discussion:

The tank presently appears to be in excellent condition and overly designed and appropriate for the present application. The plate has full wall thickness and the number of rivets is at the upper specified limit (2.25" min. center to center distance). Working loads under a full head compared to material capacity can be summarized as follows.

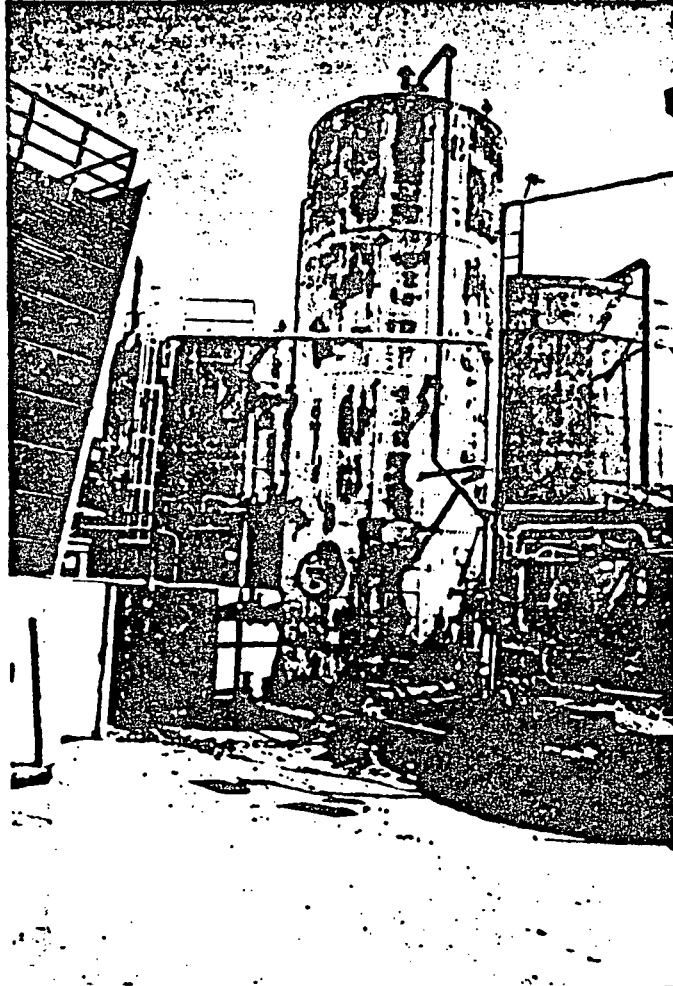
Property	Maximum Actual Loads	Material Capacity	Safety Factor
Tensile	1643 psi	24,000 min (yield)	14.6/1
Vertical Seam Load	661 lbs/in.	6362 lbs/in for "L2" design	10.3/1
Corrosion Rate	0.010" per yr. (est)		

The tank is presently not leaking or seeping and from estimated corrosion rates should not give trouble for a number of years. Yearly inspection for wall thickness is recommended as a monitor to any unforeseen accelerated corrosion.

EDWARD L. HAILE AND ASSOCIATES, INC.


William J. Arnoult III. Ph.D. P.E.
President

Enclosure
WJA/mlb



Tank B-32

TEXAS WATER COMMISSION
Comprehensive GW Monitoring Evaluation (CME) ReportINSPECTION COVER SHEETEPA ID No. TXD041067638

C.O. Use Only

04/86
Date Entry Date

RSK

NAME OF COMPANY Lubrizol Deer Park PlantSITE ADDRESS PO Box 158 Deer Park Tel 713-479-2851COUNTY Harris TYPE OF INDUSTRY PetrochemicalCurrent GW Monitoring Status: Equalization Basin - Corrective Action
(Specify for each Waste Lift Station - Assessment
Management Area "WMA")Inspection Information:Inspector(s) Carol Boucher, Mac Villas Date(s) 3/21/86Participants Robert Copes (Lubrizol); Steve Calhoun (ERM)Type of Inspection (check) EV CME X SA XEvaluation:

	S	U
A. Monitoring System	<u>✓</u>	<u> </u>
B. Sampling Procedures	<u> </u>	<u>U</u>
C. Analysis & Results	<u>✓</u>	<u> </u>
D. Records & Response	<u>✓</u>	<u> </u>

Signed: Carol Boucher
InspectorDate: 4/18/86Signed: Paul S. Lewis
ReviewerDate: 4/18/86

S= Satisfactory

U= Unsatisfactory

Overall Evaluation: Compliant ✓ NonCompliant

TEXAS WATER COMMISSION
Comprehensive GW Monitoring Evaluation (CME) Report

TWC Reg. No. 30324

CONTENTS SHEET

FACILITY NAME Lubrizol Deer Park Plant

- ☒ 1. Code Sheet (0814)
- ☒ 2. Interoffice Memorandum (IOM)
- ☒ 3. Inspection Cover Sheet
- ☒ 4. Technical Report, with supporting Attachments
 - ☒ A. Monitoring System
 - ☒ B. Sampling Procedures
 - ☒ C. Analysis and Results
 - ☒ D. Records and Response
- ☐ 5. EV Inspection Checklist (if joint inspection with District Office)
- ☒ 6. Notice of Violation (NOV) / Enforcement Letter to Facility
- ☐ 7. Other (describe) _____

* If a required Checklist is omitted, Explain: _____

INTRODUCTION

1. COMPANY: Lubrizol Corporation, Deer Park Plant

Process Description: Refinery and petrochemical complex

Plant Site has been in operation since: 1952

2. PHYSIOGRAPHY AND CLIMATE

a. Site Topography- Attachment I (indicate site location directly on map or reproduction)

b. Average Annual: Rainfall 48-52" Temperature 68-69°F Evaporation 51-53"

c. Surficial Soils Map- Attachment II

d. Surface water bodies or other recharge/discharge features or wells: Patricks Bayou forms the western boundary of the complex

e. Other pertinent features- use continuation sheet.

3. WASTE MANAGEMENT UNITS Requiring Ground Water Monitoring

- Indicate Units on Site Diagram: Attachment(s) AE-I and AL-I

- Indicate Waste Management Area (WMA) boundaries on Site Diagram

Unit	Size	Yr in Service	Status*	Construction
<u>No. 1 Lift Station</u>	<u>19,102 gals</u>	<u>1969</u>	<u>I</u>	<u>Clay bottom w/ sheet piling walls</u>
<u>Equalization Basin</u>	<u>1.39 mil gals</u>	<u>1970</u>	<u>I</u>	<u>3 feet recompacted clay bottom and sides</u>
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____
_____	_____	_____	_____	_____

NOTE: Use continuation sheet if necessary.

* A=Active Cl=Closed I=Inactive R=Regulated Unit Nil=Nonhazardous

A. Ground Water Monitoring System

1. Regional Geology (Houston Sheet, Geol. Atlas of Texas)

a. Physiographic province Gulf Coastal Plain

b. Formation(s) Beaumont

Lithology predominately interdistributary muds and clays with minor distributary sands and silts

Regional dip and gradient 1-2 feet per mile to the SE

c. Depth to top/bottom of useable quality ($<10,000$ mg/l TDS) ground

water -250- -500 feet HSL, determined by TDWR Report 241

d. Regional direction of ground water flow southeast,
determined by TDWR Report 241

e. Is site on recharge area of major/minor named aquifer (Y/N)?

Gulf Coast or Chicot aquifer

f. Part B permit application - Geology Report pages not submitted

Comments: Lubrizol submitted a Part B permit application that included only tanks as hazardous waste management units. Thus, most of the information contained in this inspection report was obtained from various reports that Lubrizol has submitted in response to the Settlement Agreement entered into on Nov 8, 1985 and judged final on Jan 6, 1986.

2. Site Hydrogeology - Equalization Basin

a. Attachment AE-I Site diagram with locations of waste management area(s) [WMA], borings, wells, lines of cross-sections, etc.

b. Site stratigraphy to depth of investigation- 60 feet:

Unit	Thickness	Description
<u>1</u>	<u>2-13'</u>	<u>Fill, dredge spoil</u>
<u>2</u>	<u>6-18'</u>	<u>Silty clay (clayey silt)</u>
		<u>Beaumont Fm ?</u>
<u>3</u>	<u>2.5-6'</u>	<u>clayey silty fine sand</u>
<u>4</u>	<u>>5'</u>	<u>Silty clay</u>

c. Attachment AE-II Cross-Section(s)

d. Saturated zone(s) and Aquitard(s)

Unit	Depth	Saturated	Potentiometric	Confined/	K*	Vertical
	Encou.	Thickness	Rise	Unconf.		Gradient
<u>3</u>	<u>18-22'</u>	<u><4'</u>	<u>Unknown</u>	<u>conf.</u>	<u>1.8×10^{-9}</u>	<u>unknown</u>

e. Is first water-bearing zone in hydraulic communication with deeper zone (Y)N)?

f. Is aquitard continuous beneath site (Y)N)?

g. If yes for e or f, calculate rate of downward vertical migration on

Attachment _____; Rate _____ Aquiclude Thickness _____

Migration Time see comments.

h. Unit(s) monitored during interim status upper saturated sand

i. Unit(s) designated as uppermost aquifer in Pt. B not designated.

Concur (Y)N)

* see comments

2. Site Hydrogeology, comments:

Question 2.d. The hydraulic conductivity figure supplied by Lubrizol is the result of laboratory falling head permeability tests. This type of test generates results that can be several orders of magnitude lower than hydraulic conductivity values generated as ^{the} result of field tests such as slug tests or pump tests.

Question 2.g. Due to the pumping of the Equalization Basin for closure purposes, the ground water is undergoing an ^{CB} "upward" flow, thus the water level in MW-EQ4 is at a higher elevation than that of either MW-EQ1, MW-EQ2 and MW-EQ3.

3. Monitor Well Construction

- a. Attachment AE-III-Well construction diagrams.
- b. Attachment AE-IV-Table of well construction details.
- c. Do monitor well installation techniques and materials of construction satisfy 31 TAC 335.192(c)-(Y/N)?
- d. Comments: _____

4. Site Ground Water Movement

- a. Attachment AE-V-Water table/Potentiometric Surface Map. (Indicate inferred flow directions directly on map. Include several maps to show the range of observed water level measurements).
- b. Calculate minimum and maximum observed gradients in units of feet/foot. Show on map and list here $i_{min} = .016 \text{ ft/ft}$
 $i_{max} = .018 \text{ ft/ft}$
- c. Attachment AE-VI-Calculations of average linear velocity (v) for gradients reported above, showing all assumptions. List results here: $v_{min} = 2.05 \text{ feet/year}$
 $v_{max} = 45.46 \text{ feet/year}$
- d. Comments: _____

5. Monitor Well Placement

- a. Indicate distance(s) of upgradient/background well(s) from WMA

150 feet

- b. Are designated upgradient well(s) confirmed as upgradient (Y/N)?

[31 TAC 335.192(a)(1)]

- c. Are upgradient well placements adequate to yield samples

representative of background groundwater quality (Y/N)? [31 TAC

335.192(a)(1)(A)], unaffected by WMA (Y/N)? [31 TAC

335.192(a)(1)(B)]

- d. Indicate on the ^{Cross section A-A'} site diagram (Att. AE-II above) the lateral spacing, in feet, of downgradient/perimeter monitor wells.

- e. Are designated downgradient wells confirmed as downgradient (Y/N)

- f. Describe the operator's justification for lateral spacing Based on an intensive boring program that was part of a required groundwater quality assessment program.

- g. Is the lateral spacing sufficient to satisfy the performance standard of 31 TAC 335.192(a)(2)? (Y/N). If no, explain in comments.

- h. Indicate on map and tabulate below the distances of down gradient wells from the edge of WMA along the direction of groundwater flow:

Well	EQ1	EQ2	EQ3						
Distance	10	10	35						
Time	5	5	17						

Calculate groundwater travel time based on v calculated above.

(12.05 feet/year)
Assuming conservative transport, will each well detect contaminants during the active life or post-closure care period. Indicate those wells that will not with (*).

1. Vertical placement- Indicate on cross-sections (Att AE-II, above) the screened and gravel-packed intervals of wells and tabulate:

Well	AE2	EQ1	EQ2	EQ3						
Screen										
length, ft.	5	5	5	5						
Aquifer										
thickness, ft	4	3	4.5	5.5						
S/U	S	S	S	S						

S=Satisfactory U=Unsatisfactory

Explain in comments why vertical placement is unsatisfactory [31 TAC 335.192(c)].

Comments:

2. Site Hydrogeology - Lift Station

a. Attachment AL-I - Site diagram with locations of waste management area(s) [WMA], borings, wells, lines of cross-sections, etc.

b. Site stratigraphy to depth of investigation - _____ feet:

Unit	Thickness	Description
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

c. Attachment AL-II - Cross-Section(s)

d. Saturated zone(s) and Aquitard(s)

Unit	Depth	Saturated	Potentiometric	Confined/	K	Vertical
	Encou.	Thickness	Rise	Unconf.		Gradient
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____
_____	_____	_____	_____	_____	_____	_____

e. Is first water-bearing zone in hydraulic communication with deeper zone (Y/N)?

f. Is aquitard continuous beneath site (Y/N)?

g. If yes for e or f, calculate rate of downward vertical migration on Attachment _____; Rate _____ Aquiclude Thickness _____ Migration Time _____.

h. Unit(s) monitored during interim status _____.

i. Unit(s) designated as uppermost aquifer in Pt. B _____
Concur (Y/N)

2. Site Hydrogeology, comments: This section of the Technical Review Memo will be completed when the final monitor well installation details for the lift station wells have been submitted ~~for~~^(B) by Lubrizol.

3. Monitor Well Construction

- a. Attachment AL-III Well construction diagrams. (Incomplete).
- b. Attachment AL-IV -Table of well construction details. (Incomplete)
- c. Do monitor well installation techniques and materials of construction satisfy 31 TAC 335.192(c)-(Y/N)?

d. Comments: The completion details for MW-1 are not available at this time. Both LS-1 and LS-2 are adequately completed.

4. Site Ground Water Movement

- a. Attachment AL-V -Water table/Potentiometric Surface Map. (Indicate inferred flow directions directly on map. Include several maps to show the range of observed water level measurements).
- b. Calculate minimum and maximum observed gradients in units of feet/foot. Show on map and list here _____
- _____.

c. Attachment _____ -Calculations of average linear velocity (v) for gradients reported above, showing all assumptions. List results here: _____

_____.

d. Comments: There is insufficient data available at this time to make these calculations.

5. Monitor Well Placement

- a. Indicate distance(s) of upgradient/background well(s) from WMA

140 feet

- b. Are designated upgradient well(s) confirmed as upgradient (Y/N)?

[31 TAC 335.192(a)(1)]

- c. Are upgradient well placements adequate to yield samples

representative of background groundwater quality (Y/N)? [31 TAC

335.192(a)(1)(A)], unaffected by WMA (Y/N)? [31 TAC

335.192(a)(1)(B)]

- d. Indicate on the site diagram (Att. AL-Tabove) the lateral spacing, in feet, of downgradient/perimeter monitor wells.

- e. Are designated downgradient wells confirmed as downgradient (Y/N)

LS-2 is downgradient to LS-1

- f. Describe the operator's justification for lateral spacing based

on minimum requirement set forth in

Settlement Agreement of Nov 8, 1985.

- g. Is the lateral spacing sufficient to satisfy the performance

standard of 31 TAC 335.192(a)(2)? (Y/N). If no, explain in

comments. Insufficient information at this time

- h. Indicate on map and tabulate below the distances of down gradient

wells from the edge of WMA along the direction of groundwater flow:

Well	LS-2	MW-1							
Distance									
Time									

Insufficient information at this time.

Calculate groundwater travel time based on v calculated above.

Assuming conservative transport, will each well detect contaminants

during the active life or post-closure care period. Indicate those

wells that will not with (*).

1. Vertical placement- Indicate on cross-sections (Att AL-II^{*}, above)
the screened and gravel-packed intervals of wells and tabulate:

Well									
Screen									
length									
Aquifer									
thickness									
S/U									

S=Satisfactory U=Unsatisfactory

Explain in comments why vertical placement is unsatisfactory [31 TAC
335.192(c)].

Comments: Insufficient information has been submitted
at this time.

*not included at this time.

B. Sampling Procedures

1. a. Is a Sampling Plan [31 TAC 335.193(a)] maintained at the facility? ~~yes~~ Include a copy as Attachment B-I.
Yes X No

b. Does the plan address the following items:

- | | | |
|--------------------------------------|--------------|----------------|
| (1) Sample collection procedures | Yes <u>X</u> | No <u> </u> |
| (2) Sample preservation and shipment | Yes <u>X</u> | No <u> </u> |
| (3) Analytical procedures | Yes <u>X</u> | No <u> </u> |
| (4) Chain of custody procedures | Yes <u>X</u> | No <u> </u> |

c. List deficiencies/omissions/recommended changes:

see attached comments

d. Does the facility follow the plan during sampling events? Yes No ✓

If not, describe differences between the plan and actual sampling procedures: There were two substantial differences between the sampling plan and the observed procedure. The wells were bailed (evacuated) just prior to sampling. New disposed rope was used for the bailers.

2. Are wells equipped with caps (Y)N, annulus seals (Y)N to prevent contamination from surface sources? Are the well caps lockable? (Y)N

3. Describe how and when measurements of water level and well total depth are made: Water level measurements were ~~not~~ measured to the nearest .1 inch by a Slope Indicator Co. Model 51453 E-line. Total depth measurements were not taken.

4. a. Describe well evacuation equipment and techniques: The wells were evacuated just prior to sampling with dedicated bailers and new bailer ropes. Three casing volumes were evacuated from each well.

Comments to Question B.1.c. The sampling plan should be augmented and updated as noted below:

1. The wells should be evacuated no more than three hours prior to the sampling event.
2. The water level measurements and the total depth measurements should be recorded to the nearest .01 foot.

- b. Are appropriate collection and disposal methods used for bailed water? (Y/N) Describe: The bailed water was collected in 50 gallon buckets and released into the plant waste water treatment system.
- c. If the same equipment is used to evacuate each well, describe decontamination procedures: NA

5. a. Describe the sampling equipment and methodology used to collect samples: The samples are collected with dedicated bailers.

- b. If the same equipment is used to ^{sample} ~~evacuate~~ each well, describe decontamination procedures: NA

- c. Indicate the order in which samples are taken:
1st VOA; 2nd GCM S; 3rd pH + SC;
4th metals/gw/TOC

6. Indicate parameters determined in the field/ on-site lab; within less than 10 (min.) hr. of taking sample:

(Note type of instruments used.)

Temperature centimeter scale

pH La Motte Chemical

Sp. Conductance Yellow Springs Instrument Co, Model 33

Other _____

7. a. Describe techniques for field filtration of samples: _____

none

- b. Parameters filtered: metals are filtered at the contract lab.

8. Complete the following table for the facility's sampling program:

Container	Preservative	Parameters	S/U
1 gal glass jug	ice	organics	S
VOA vial	ice	# ^{OK} VOA	S
glass, 1 liter	acid (^{type} unknown)	metals	S
glass, 1 liter	acid (^{type} unknown)	TOC	S

S = Satisfactory U = Unsatisfactory

Comments:

9. Is the observed sampling methodology adequate for :

a. Indicator parameters N/A Yes ☒ No ☐

b. Quality parameters	N/A	Yes	<input checked="" type="checkbox"/>	No
-----------------------	-----	-----	-------------------------------------	----

c. Drinking water parameters	N/A	Yes	<input checked="" type="checkbox"/>	No
------------------------------	-----	-----	-------------------------------------	----

d. Metals	N/A	Yes	<input checked="" type="checkbox"/>	No
-----------	-----	-----	-------------------------------------	----

e. Volatile organics (✓); Floating immiscible organics ();
Dense immiscible organics () [check if applicable] :
N/A Yes ✓ No

f. Describe possible problems:

10. Describe any Quality Assurance/Quality Control (QA/QC) procedures used in the facility's sampling program: Blanks are prepared.

11. a. Describe Chain of Custody (C.O.C.) and shipping procedures: Samples were collected by ERM Southwest personnel, COC is signed by sampler, the samples are then relinquished to Lubrizol. NUS (the contract lab) sends an runner to pick up the samples.

b. Attachment B-I: Example of C.O.C.* tag or Example of sample identification tag or label.

Attachment _____:

12. Do the C.O.C. and shipping procedures minimize the possibility of tampering with the samples? Yes ☒ No ☐

If not, describe possible problems: _____

13. Complete the following items if monitor wells are co-sampled with the facility operator.

a. Person(s) who collected samples for:
Facility Steve Calhoun (ERM Southwest)
TWC Carol Boucher

b. Number of wells co-sampled: 5 of 7 total RCRA wells.

c. Attachment B-II - TWC Sample Schedule

d. Attachment B-III - TWC Field Notes

e. Comments: _____

* included in the sampling plan

C. Analysis and Results

1. Attachment C-I - Tabulation of analytical methods. Indicate directly on attachment which analyses are performed by: (*) off-site contract lab; (**) on-site operator lab; (***) field measurement. *Specific conductance, temperature and pH are field measured. All other analyses are performed by off-site contract lab.*
2. Are all samples analyzed with an EPA - approved method? Yes ☒ No ☐

If not, indicate on the attachment which methods are not EPA - approved.

3. a. Has the operator been consistent during the monitoring program in its use of methods? Yes ☒ No ☐
- b. Has the operator changed laboratories during the program? Yes ☒ No ☐
- c. Describe any inconsistencies and how the operator has tried to resolve them: *Since the assessments plans have been instituted, only one contract lab has been utilized.*

4. What is the sample analysis turn-around time (i.e., time required to receive results from laboratory)? *7 to 10 days.*

5. a. Describe the laboratory's Quality Assurance/Quality Control (QA/QC) measures: *NUS utilizes a complete QA/QC program.*

- b. Attachment C-II - Example of analytical results and/or QA/QC results as reported by the laboratory to the operator.

6. Do the results of the QA/QC program verify the validity and reliability of the laboratory and field-generated data?
Yes X No

If not, describe possible problems: _____

7. Review the operator's records of analytical results for:

- a. Parameters of initial year of sampling which exceed IPDWS;
b. Parameters sampled as part of a Ground Water Quality Assessment Plan.

Indicate on Attachment any parameters exceeding IPDWS, or for which reported detection limits increase through time or appear high relative to other wells.

8. Overall, does the analysis program enable the reliable detection of, and for assessment purposes, the quantification of a release of hazardous constituents to ground water from the monitored WMA? Yes X No

Comments: Lubrizol did not undergo an initial year of background monitoring. Lubrizol has completed the assessment in the Equalization Basin WMA and is in the process of assessment in the No. 1 Lift Station WMA. There is confirmed contamination in the EB and a corrective action plan has been submitted.

9. Results of co-sampling events.

Attachment C-III - Results of Operator sample analyses. *

Attachment C-IV - Results of TWC sample analyses.

- a. Describe any apparent discrepancies between data sets:

* The operator sample analyses results have not been made available to the TWC at this time. The GCMS and VOA analyses are not available from the TDH lab at this time. This section of the Technical Review Memo will be completed and added as an addendum when these results become available.

b. Compare data sets to historical results - note here any parameters which do not occur within previously observed ranges: _____

c. Do TWC results confirm the operator's results?

Yes _____ No _____

If not, describe possible sources of error: _____

10. Describe the ground water quality, based on TWC results, utilizing Stiff diagrams, tri-linear plots, etc. Is ground water contamination confirmed? Yes ☒ No _____

Comments: _____

D. Records

There were no recordkeeping deficiencies noted during this inspection.

Response

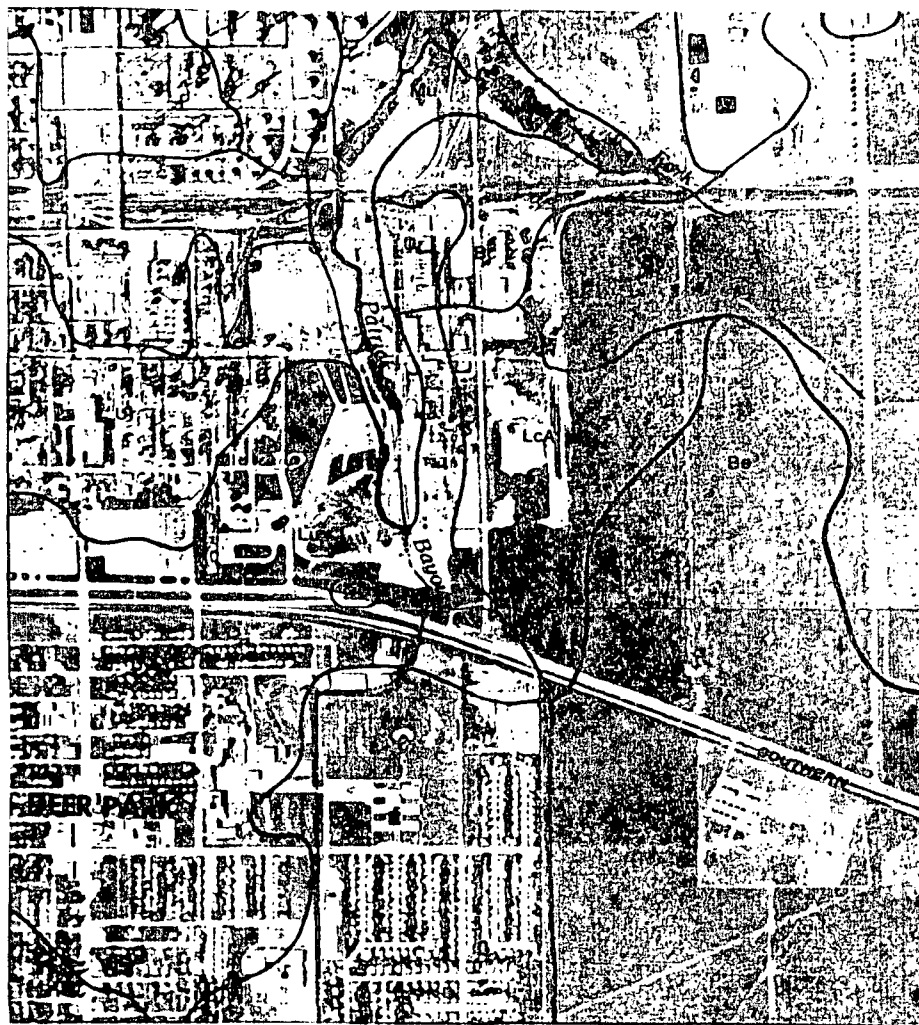
An IOM requesting enforcement action was submitted by District 7 in response to the lack of monitor wells in the Equalization Basin Waste Management Area and the No. 1 Lift Station Waste Management Area on January 25, 1985. An IOM was sent to the General Counsel on March 11, 1985 and Lubrizol was classified as a High Priority Violator on March 21, 1985. On May 13, 1985, a request was sent to the Attorney Generals' office to institute formal legal action. A Settlement Agreement was entered into on November 8, 1985. The judgement against Lubrizol was made final on January 6, 1986.

The terms of the Settlement Agreement and the subsequent actions undertaken by Lubrizol are summarized below:

1. In regard to the No. 1 Lift Station
 - A) Ground Water Quality Assessment Plan,
 - 1) submitted November 12, 1985
 - 2) reviewed January 14, 1986
 - 3) revised January 29, 1986
 - 4) approved February 13, 1986
 - B) Monitor wells were installed by March 17, 1986,
 - C) Monitor wells sampled on March 21, 1986,
 - D) Ground Water Quality Assessment Plan Results due by May 21, 1986,
 - E) If contamination is indicated by the assessment, a Compliance Plan Application must be submitted within 90 days of such a determination (about August 21, 1986),
 - F) An extension was requested by Lubrizol on the closure,
 - G) Must submit certification by a Professional Engineer upon termination of the corrective action, if necessary, and upon completion of closure.

2. In regard to the Equalization Basin

- A) Ground Water Quality Assessment Plan,
 - 1) a satisfactory GWQAP had been submitted prior to the Agreement
 - 2) results submitted on December 28, 1984
- B) Compliance Plan was submitted on February 5, 1986,
- C) Must submit certification by a Professional Engineer upon termination of corrective action and closure,
- D) Was removed from service prior tp November 8, 1985,
- E) Lubrizol elected to utilize an alternate waste management unit,
- F) The Equalization Basin was bypassed and a closure plan was submitted,
- G) Lubrizol did not elect to use this alternative,
- H) Closure Plan.
 - 1) submitted on November 21, 1985
 - 2) reviewed on February 6, 1986
 - 3) revised on March 5, 1986
 - 4) approved on March 21, 1986



TEXAS WATER COMMISSION

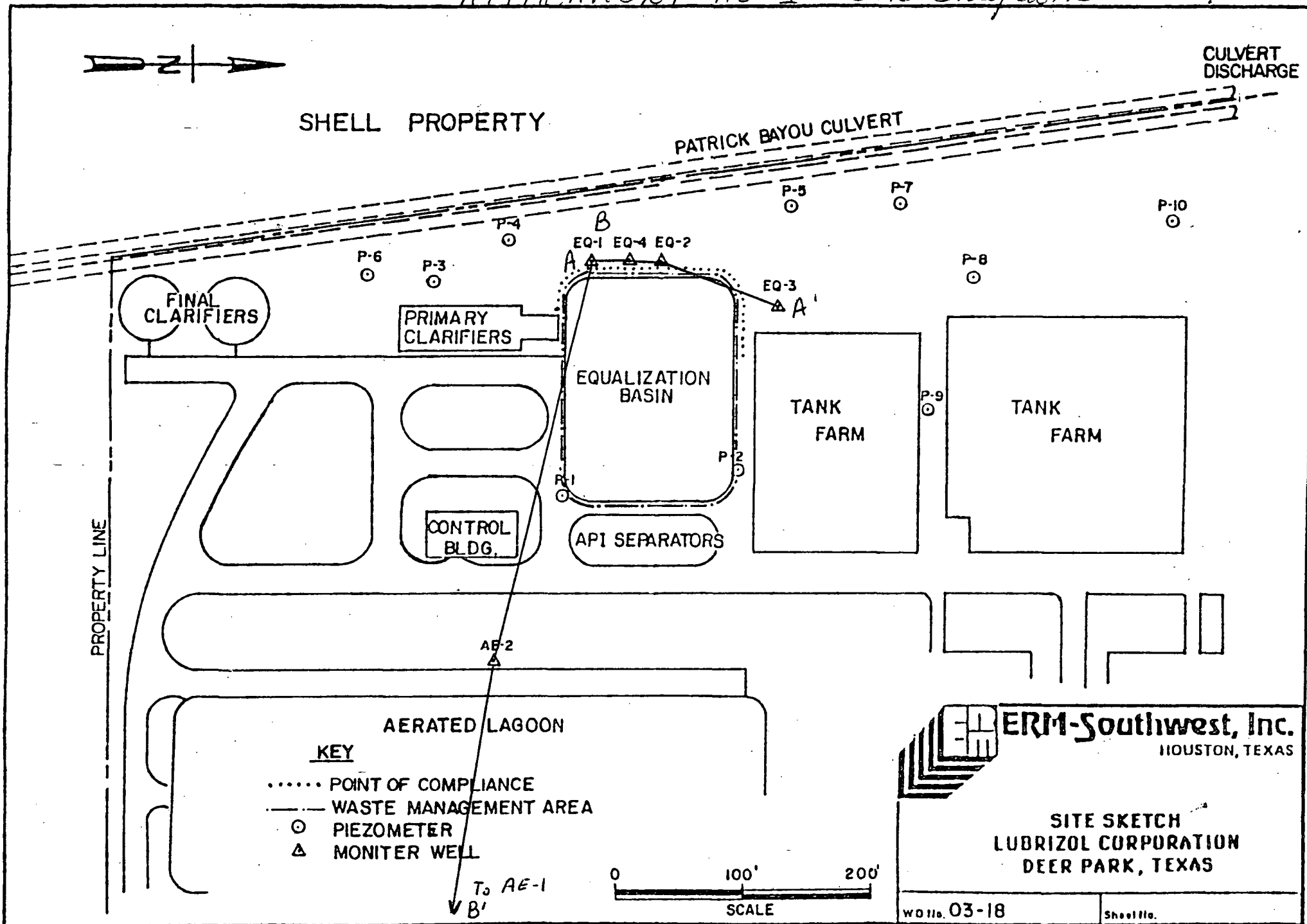
District No. *Central Office*

ATTACHMENT II
Surficial Soils Map

ATTACHMENT *AE-III*

Well Construction Diagrams

ATTACHMENT AE-I Site Diagram

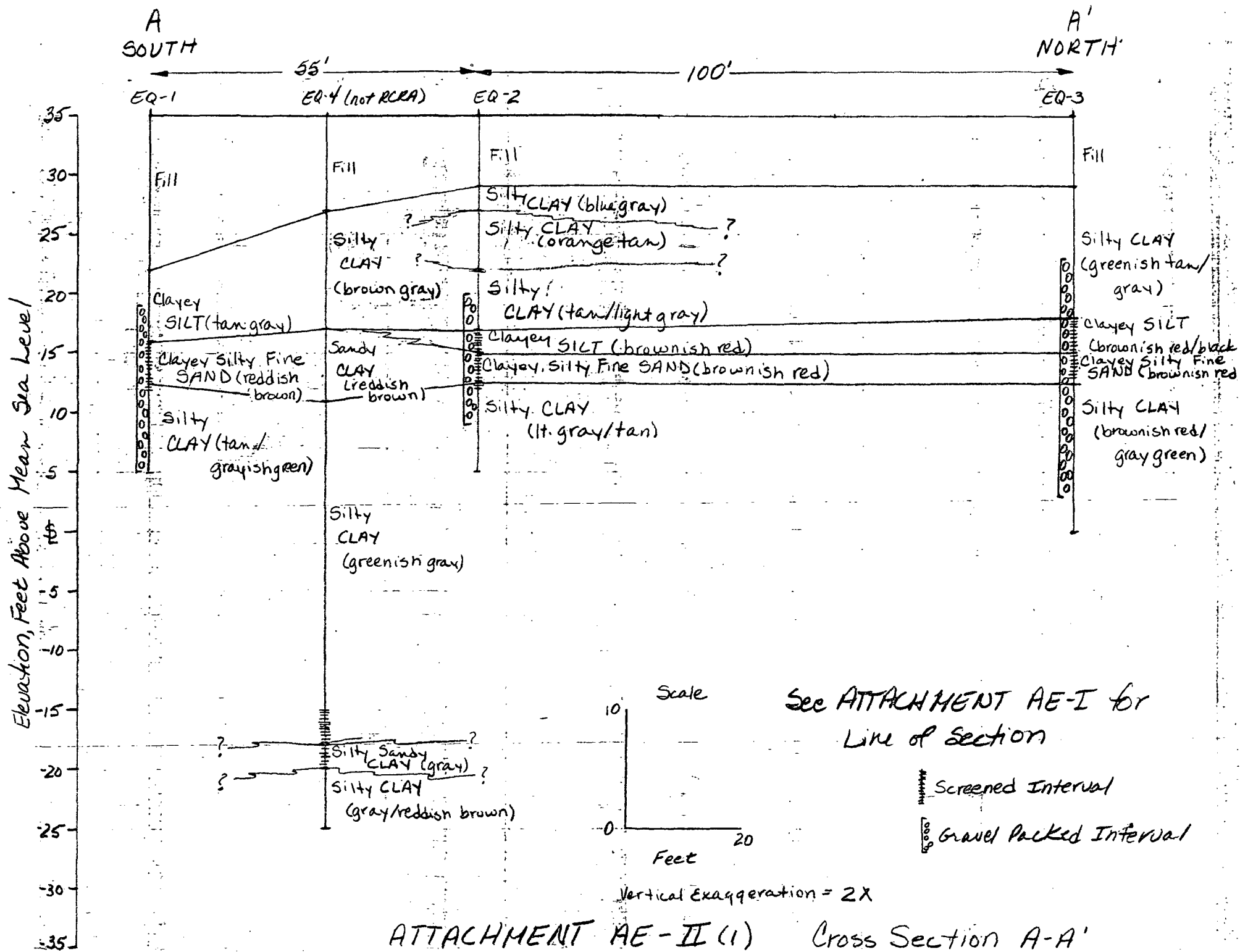


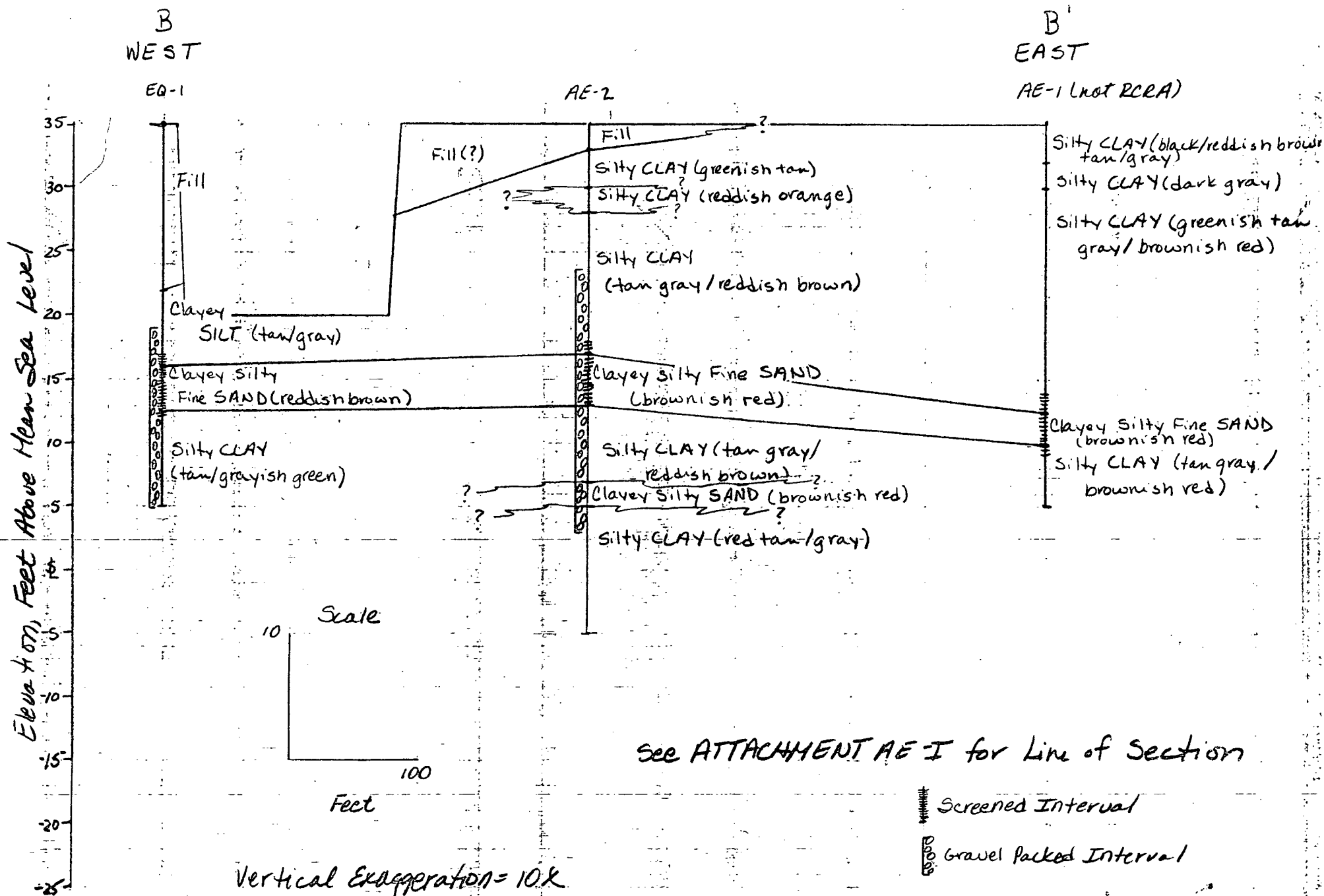
ERM-Southwest, Inc.
HOUSTON, TEXAS

SITE SKETCH
LUBRIZOL CORPORATION
DEER PARK, TEXAS

W011b. 03-18

Sheet 11b.



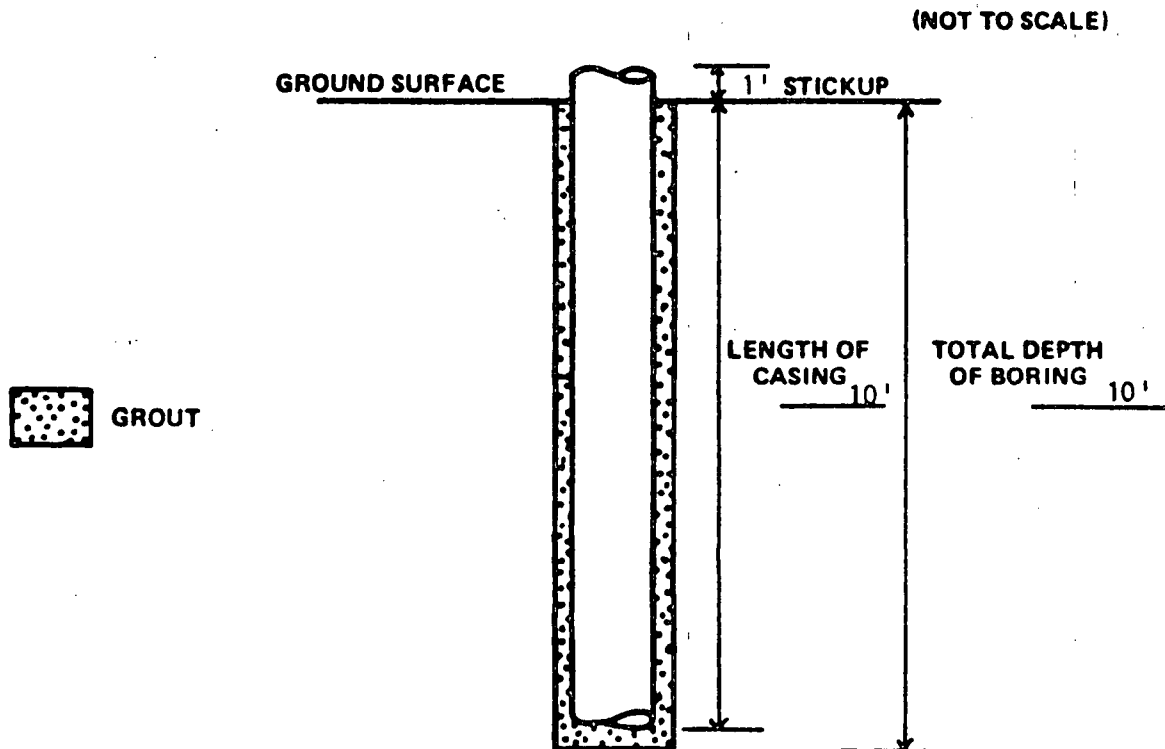


SEE ATTACHMENT AE-I for Line of Section

ATTACHMENT AE-II(2) Cross Section B-B'

TYPE III MONITORING WELL INSTALLATION RECORD - Part A

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER EQ-1 INSTALLATION DATE 10-03-84
LOCATION G+02.5, 25+0.5
GROUND SURFACE ELEVATION 34.39
CASING MATERIAL SCHD. 40 PVC CASING DIAMETER 6"
BOREHOLE DIAMETER 8"
DRILLING TECHNIQUE Rotary Wash
DRILLING CONTRACTOR LETCo
LAW ENGINEERING FIELD REPRESENTATIVE R. H. Long

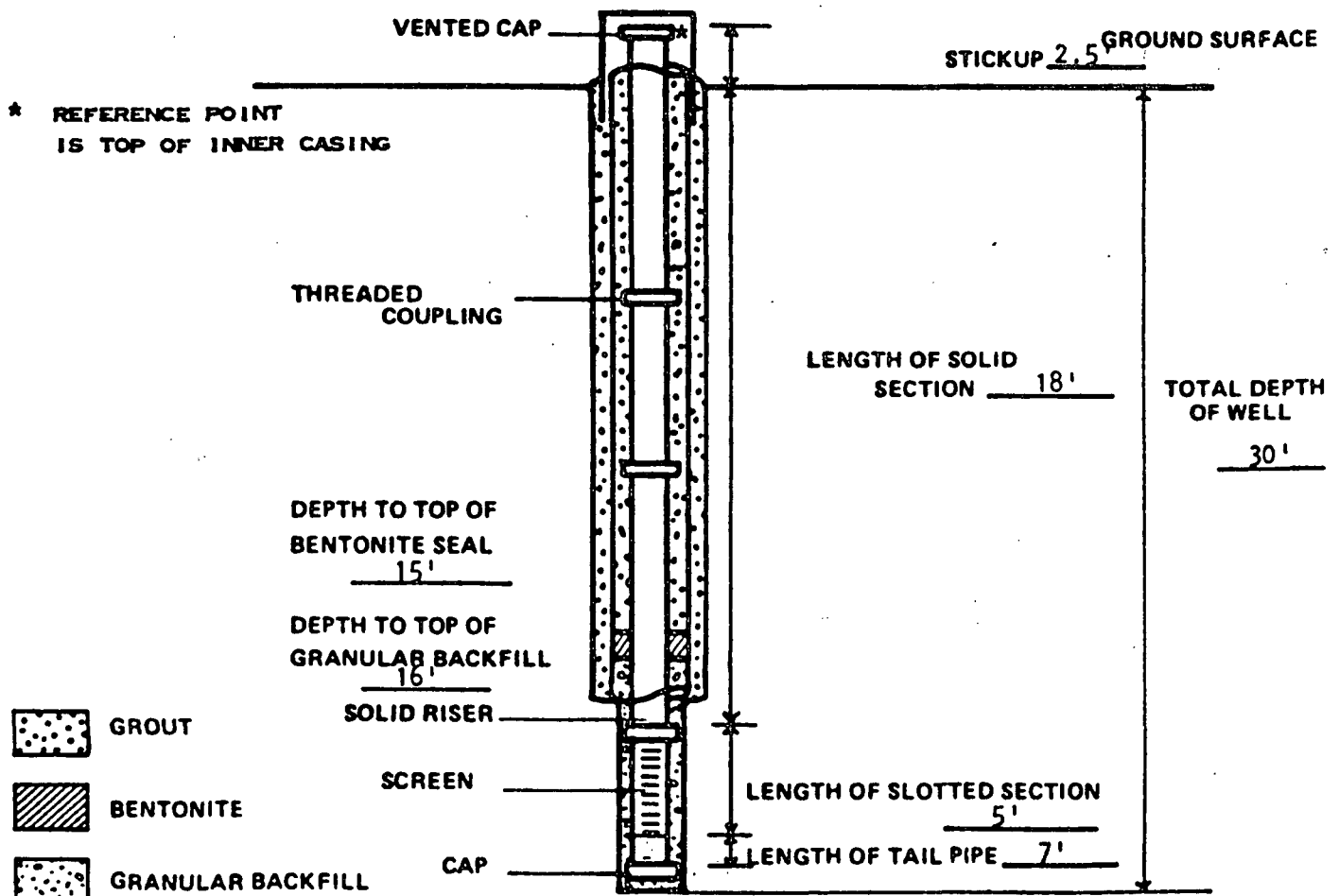


LAW ENGINEERING TESTING
COMPANY
HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER EQ-1 INSTALLATION DATE 10-09-84
 LOCATION G+02.5, 25+0.5
 GROUND SURFACE ELEVATION 34.39 REFERENCE POINT ELEVATION 36.89
 GRANULAR BACKFILL Clemtex #2 SLOT SIZE .015"
 SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
 RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
 BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. R. H. Long
 DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
 LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
 STABILIZED WATER LEVEL 6'7" FEET BELOW GROUND SURFACE, MEASURED ON 10-18-84

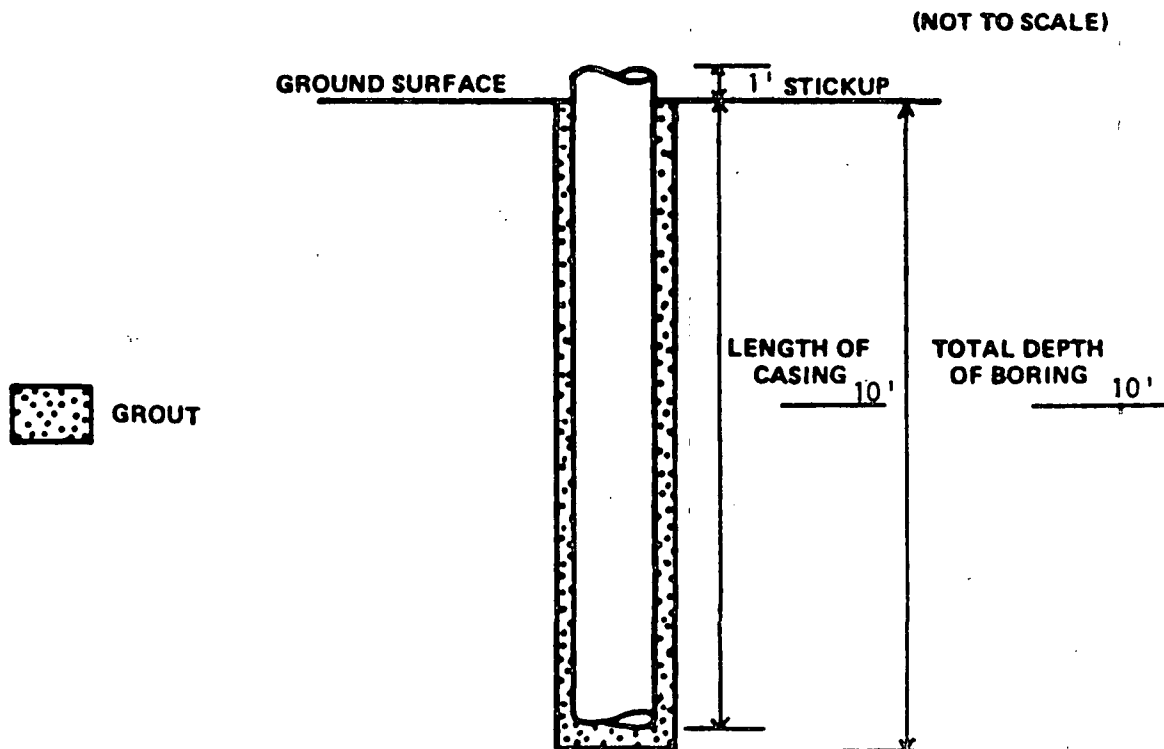
(NOT TO SCALE)



LAW ENGINEERING TESTING
COMPANY
HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part A

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER EQ-2 INSTALLATION DATE 10-02-84
LOCATION G+07.42, 24+46.17
GROUND SURFACE ELEVATION 34.37
CASING MATERIAL SCHD. 40 PVC CASING DIAMETER 6"
BOREHOLE DIAMETER 8"
DRILLING TECHNIQUE Rotary Wash
DRILLING CONTRACTOR LETCo
LAW ENGINEERING FIELD REPRESENTATIVE R. H. Long

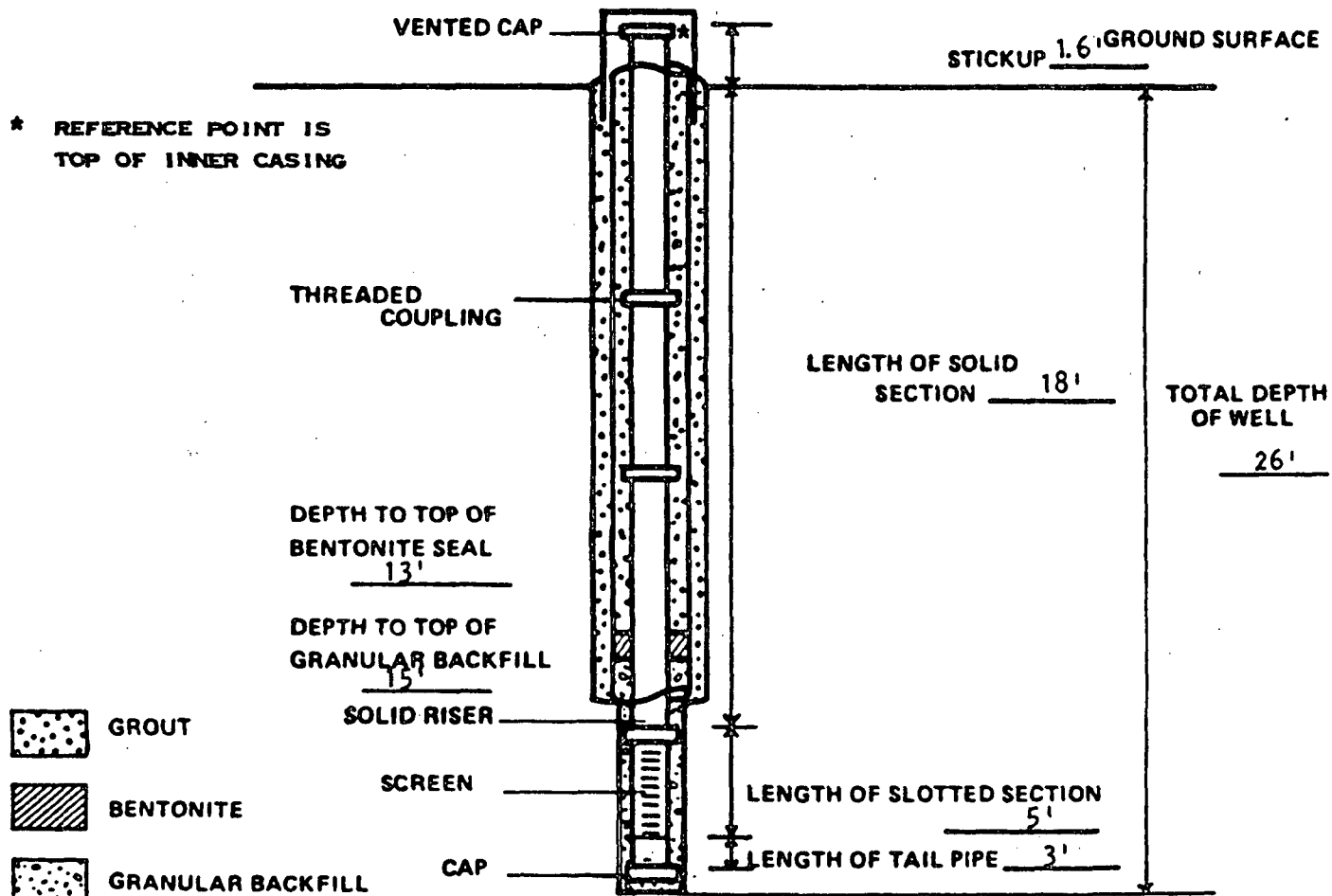


LAW ENGINEERING TESTING
COMPANY
HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER EQ-2 INSTALLATION DATE 10-08-84
LOCATION G+07.42, 24+46.17
GROUND SURFACE ELEVATION 34.37 REFERENCE POINT ELEVATION 36.0
GRANULAR BACKFILL Clemtex #2 SLOT SIZE .015"
SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. S.J. Lauristen
DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
STABILIZED WATER LEVEL 6'7" FEET BELOW GROUND SURFACE, MEASURED ON 10-18-84

(NOT TO SCALE)

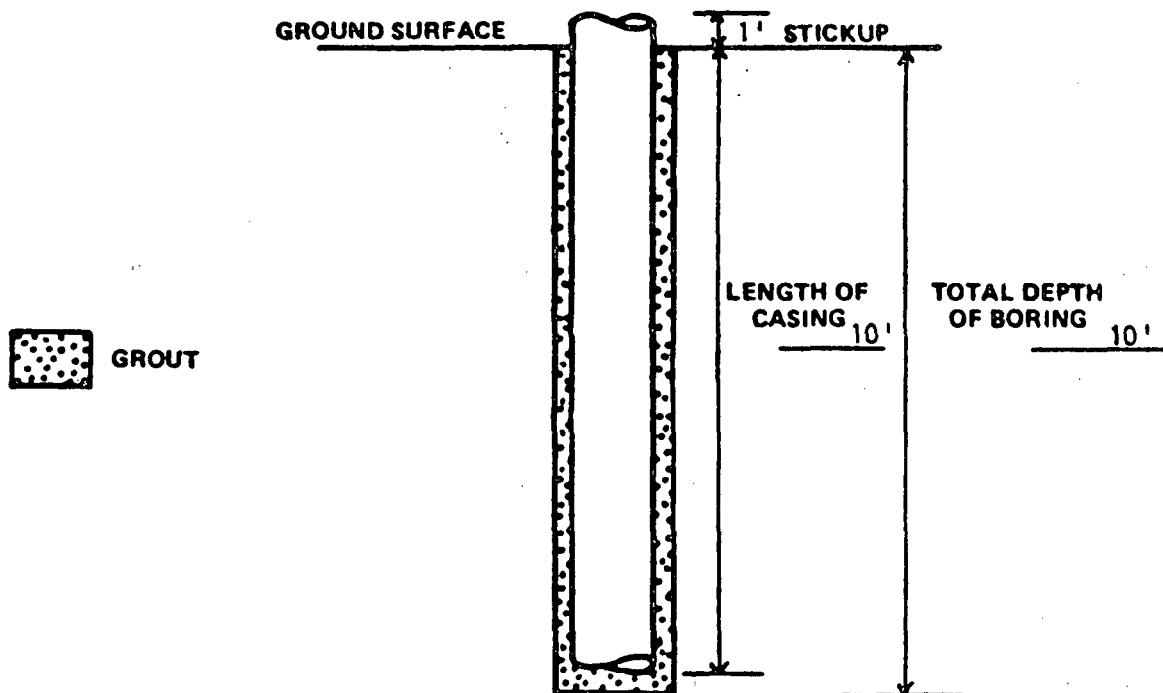


LAW ENGINEERING TESTING
COMPANY
HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part A

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER EQ-3 INSTALLATION DATE 10-02-84
 LOCATION F+70.17, 23+56.07
 GROUND SURFACE ELEVATION 34.28
 CASING MATERIAL SCHD. 40 PVC CASING DIAMETER 6"
 BOREHOLE DIAMETER 8"
 DRILLING TECHNIQUE Rotary Wash
 DRILLING CONTRACTOR LETCo
 LAW ENGINEERING FIELD REPRESENTATIVE R. H. Long

(NOT TO SCALE)

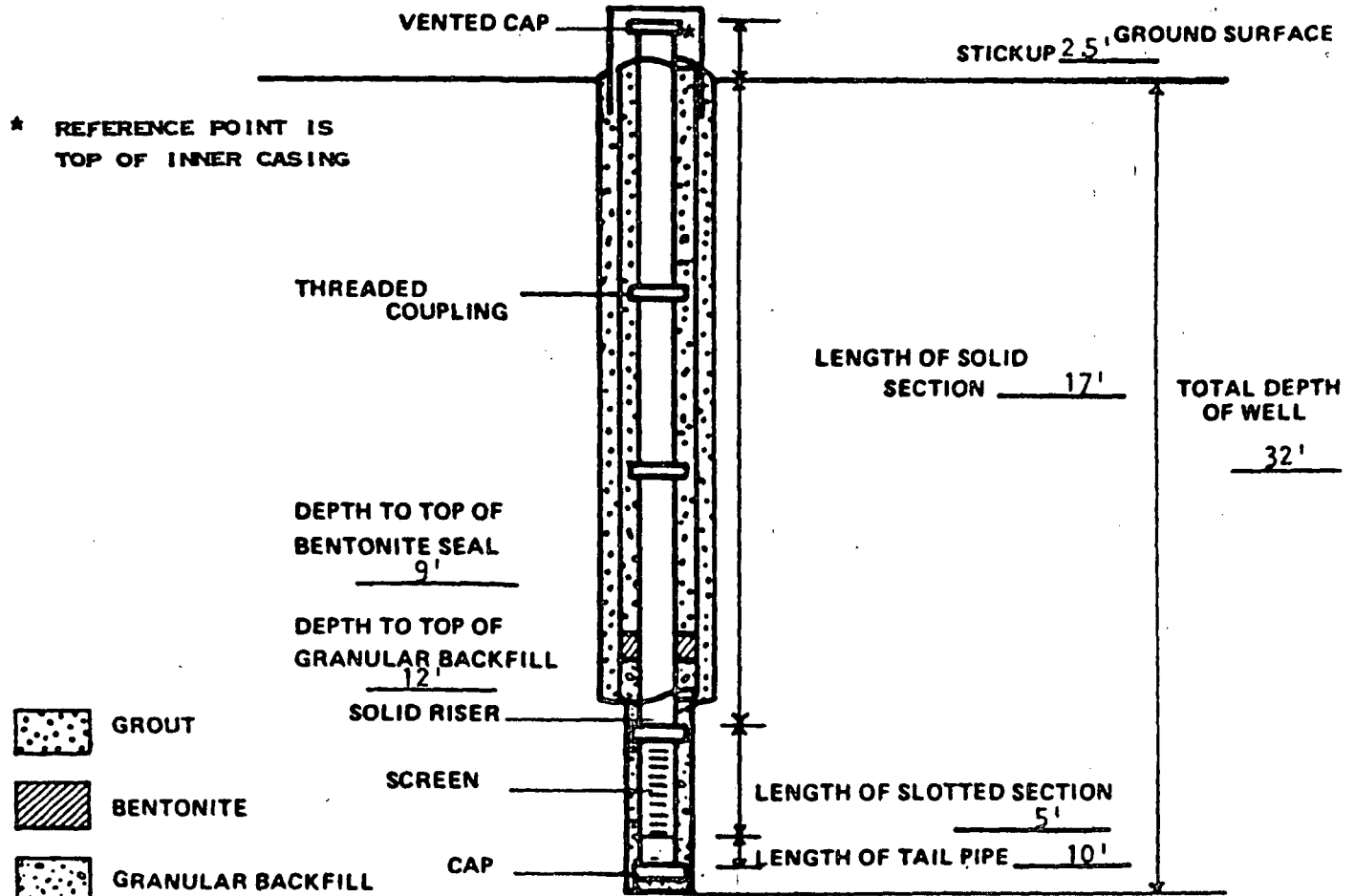


LAW ENGINEERING TESTING
 COMPANY
 HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER EQ-3 INSTALLATION DATE 10-03-84
 LOCATION F+70.17, 23+56.07
 GROUND SURFACE ELEVATION 34.28 REFERENCE POINT ELEVATION 36.78
 GRANULAR BACKFILL Clemtex #2 SLOT SIZE .015"
 SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
 RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
 BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. R.H. Long
 DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
 LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
 STABILIZED WATER LEVEL 6'10" FEET BELOW GROUND SURFACE, MEASURED ON 10-18-84

(NOT TO SCALE)

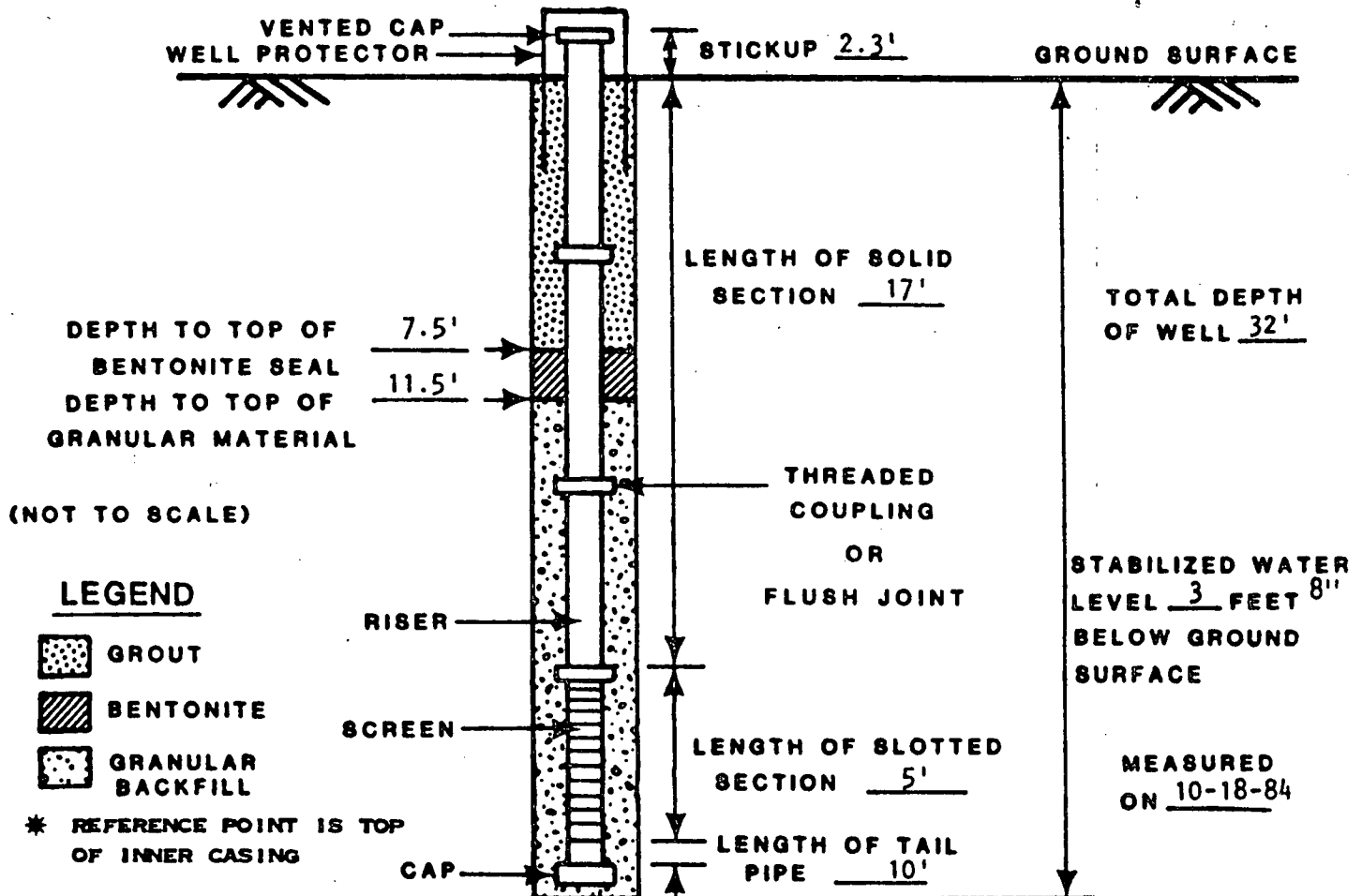


LAW ENGINEERING TESTING
 COMPANY
 HOUSTON, TEXAS

TYPE II MONITORING WELL INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER AE-2 INSTALLATION DATE 10-09-84
LOCATION c+97.25, 25+76
GROUND SURFACE ELEVATION 34.75 REFERENCE POINT ELEVATION 37.0
GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE .015"
SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
BOREHOLE DIAMETER 6" LAW ENGINEERING R.H. Long
LOCK BRAND _____ FIELD REPRESENTATIVE _____
KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *



LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

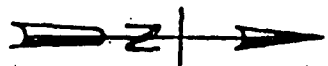
Attachment AE-IV Table of Well Construction Details

Well Number	AE-2	EQ-1	EQ-2	EQ-3				
Hole diameter, in.	6	6	6	6				
Total depth, ft.	32	30	26	32				
Drill method	rotary wash	—————→						
Date drilled	10/9/84	10/9/84	10/8/84	10/3/84				
Casing I.D., in	3	3	3	3				
Casing type	Sch 40 PVC	—————→						
How joined	threaded couplings							
Stick-up length, ft	2.3	2.5	1.4	2.5				
T.O.C.-MSL	37.00	36.89	36.00	36.78				
Ground level-MSL	34.75	34.39	34.37	34.28				
Capped/Lockable	Capped	—————→						
Surface pad size								
Depth of surface seal, ft below ground level	7.5	15	13	9				
Annulus Fill	grout-Portland Type 1							
Depth-annulus seal, ft below ground level	7.5	15	13	9				
Depth-gravel pack, ft below ground level	11.5	16	15	12				
Length-gravel pack, ft	20.5	14	11	20				
Size-gravel pack	Clemtex #2 Sand	—————→						
Depth to screen, ft below ground level	17	18	18	17				
Screen I.D./slot, in/in	3"/0.015	—————→						
Screen type	Sch 40 PVC Hill Slot	—————→						
Screen length, ft	5	5	5	5				
Blank length	10	7	3	10				
Development Method	air lift	—————→						

Comments: EQ-1, EQ-2 and EQ-3 have a 10 foot Sch 40 PVC Braid protector casing installed with a 1 foot stick-up.

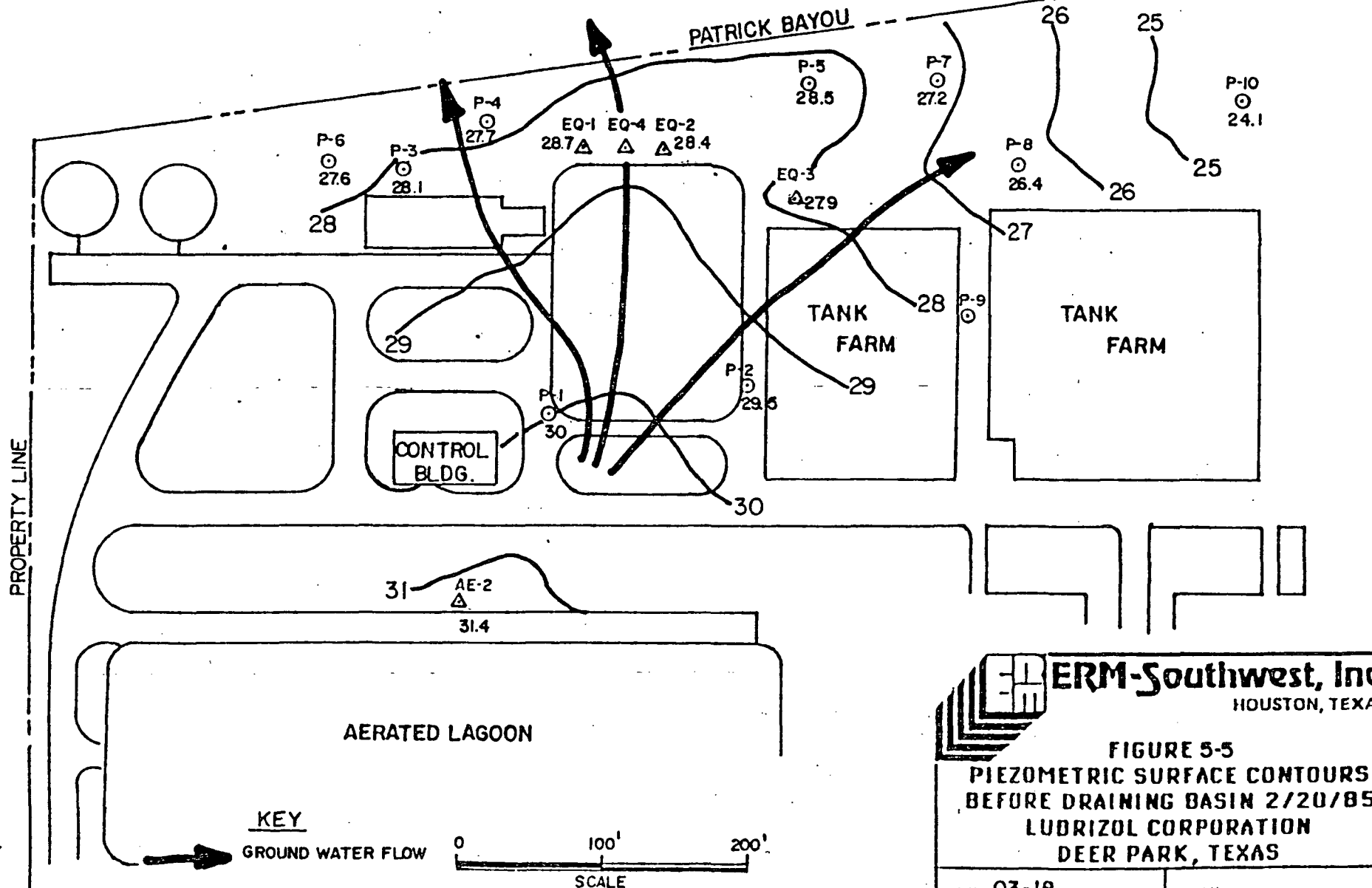
ATTACHMENT AE-V

Potentiometric Surface Maps



SHELL PROPERTY

CULVERT




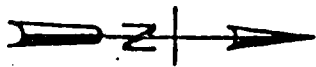
**ERM-Southwest, Inc.**
HOUSTON, TEXAS

FIGURE 5-5
PIEZOMETRIC SURFACE CONTOURS
BEFORE DRAINING BASIN 2/20/85
LUDRIZOL CORPORATION
DEER PARK, TEXAS

W.D. No. 03-18

Sheet No.

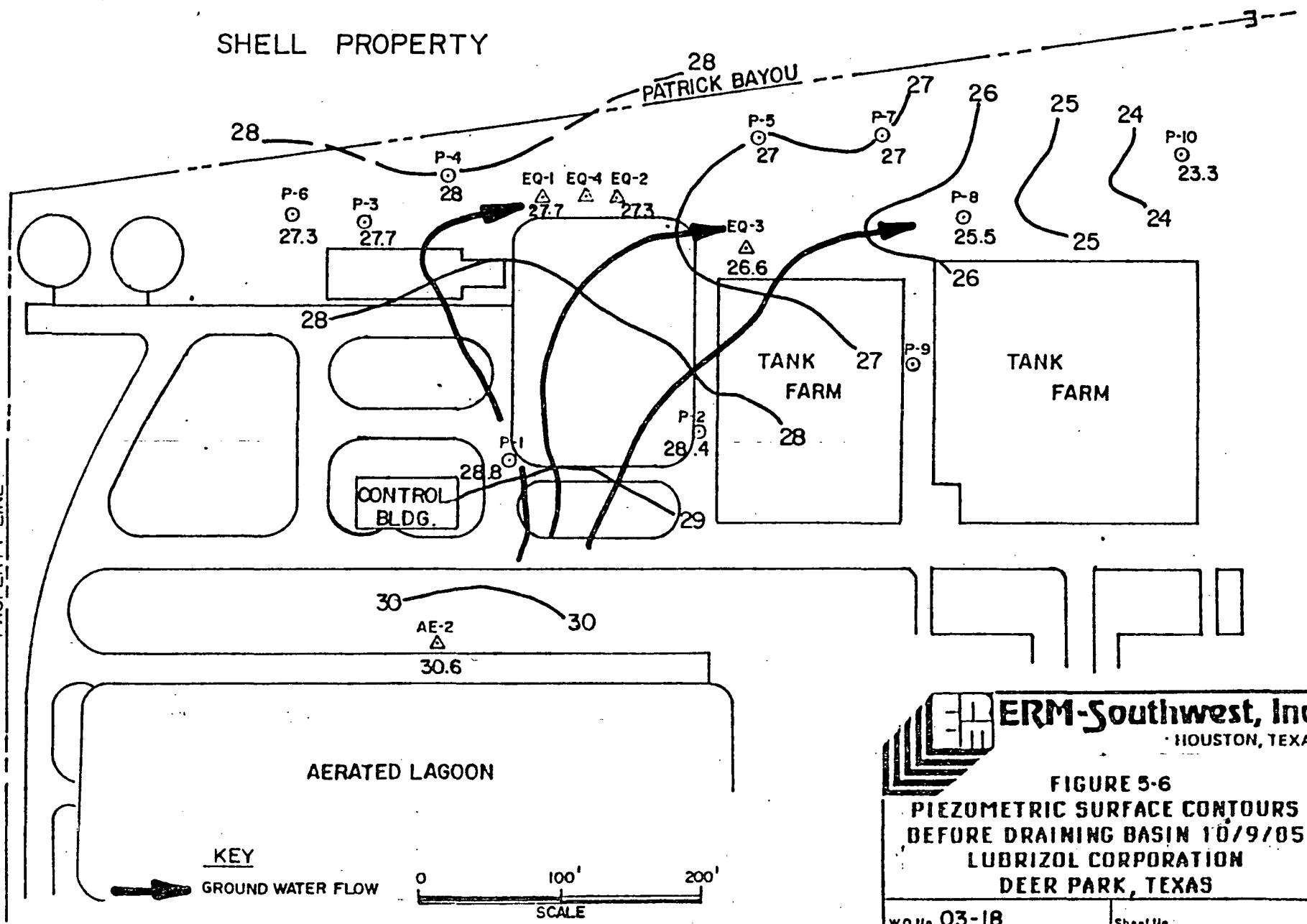
CULVERT



SHELL PROPERTY

28
PATRICK BAYOU

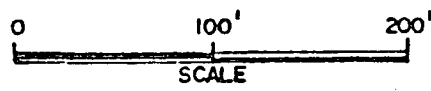
PROPERTY LINE



KEY



GROUND WATER FLOW



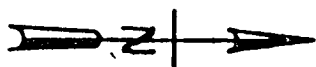
ERM-Southwest, Inc.

HOUSTON, TEXAS

FIGURE 5-6
PIEZOMETRIC SURFACE CONTOURS
BEFORE DRAINING BASIN 10/9/85
LUBRIZOL CORPORATION
DEER PARK, TEXAS

W.D. No. 03-18

Sheet No.

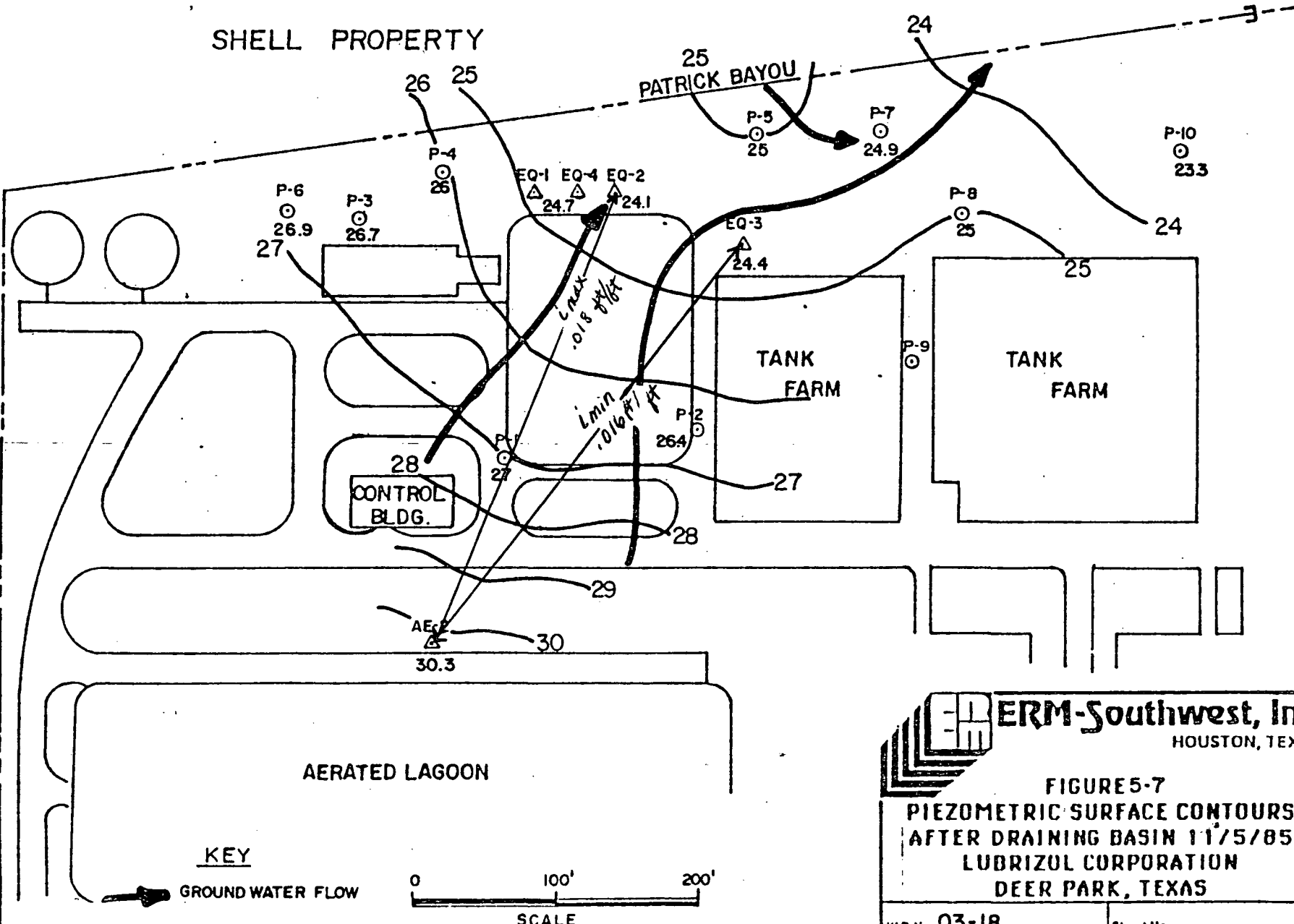


CULVERT

SHELL PROPERTY

25
PATRICK BAYOU

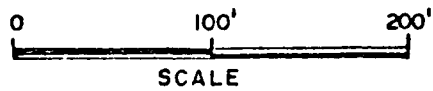
PROPERTY LINE



KEY



GROUND WATER FLOW



ERM-Southwest, Inc.
HOUSTON, TEXAS

FIGURE 5-7
PIEZOMETRIC SURFACE CONTOURS
AFTER DRAINING BASIN 11/5/85
LUBRIZOL CORPORATION
DEER PARK, TEXAS

W.D. No. 03-18

Sheet No.

$$V = \frac{K i}{\theta} \quad \text{where } V = \text{horizontal hydraulic flow velocity}$$

K = horizontal hydraulic conductivity

i = horizontal gradient²

θ = effective porosity³

$$V_{\min} = \frac{K_{\min} i_{\min}}{\theta} \quad (28)$$

$$= \frac{(4.3 \times 10^{-5} \text{ cm/sec} \times .016 \text{ ft/ft})}{.35}$$

$$= 1.97 \times 10^{-6} \text{ cm/sec}$$

$$= 2.05 \text{ ft/year}$$

$$V_{\max} = \frac{K_{\max} i_{\max}}{\theta}$$

$$= \frac{(8.5 \times 10^{-4} \text{ cm/sec} \times .018 \text{ ft/ft})}{.35}$$

$$= 43.71 \times 10^{-6} \text{ cm/sec}$$

$$= 45.46 \text{ ft/year}$$

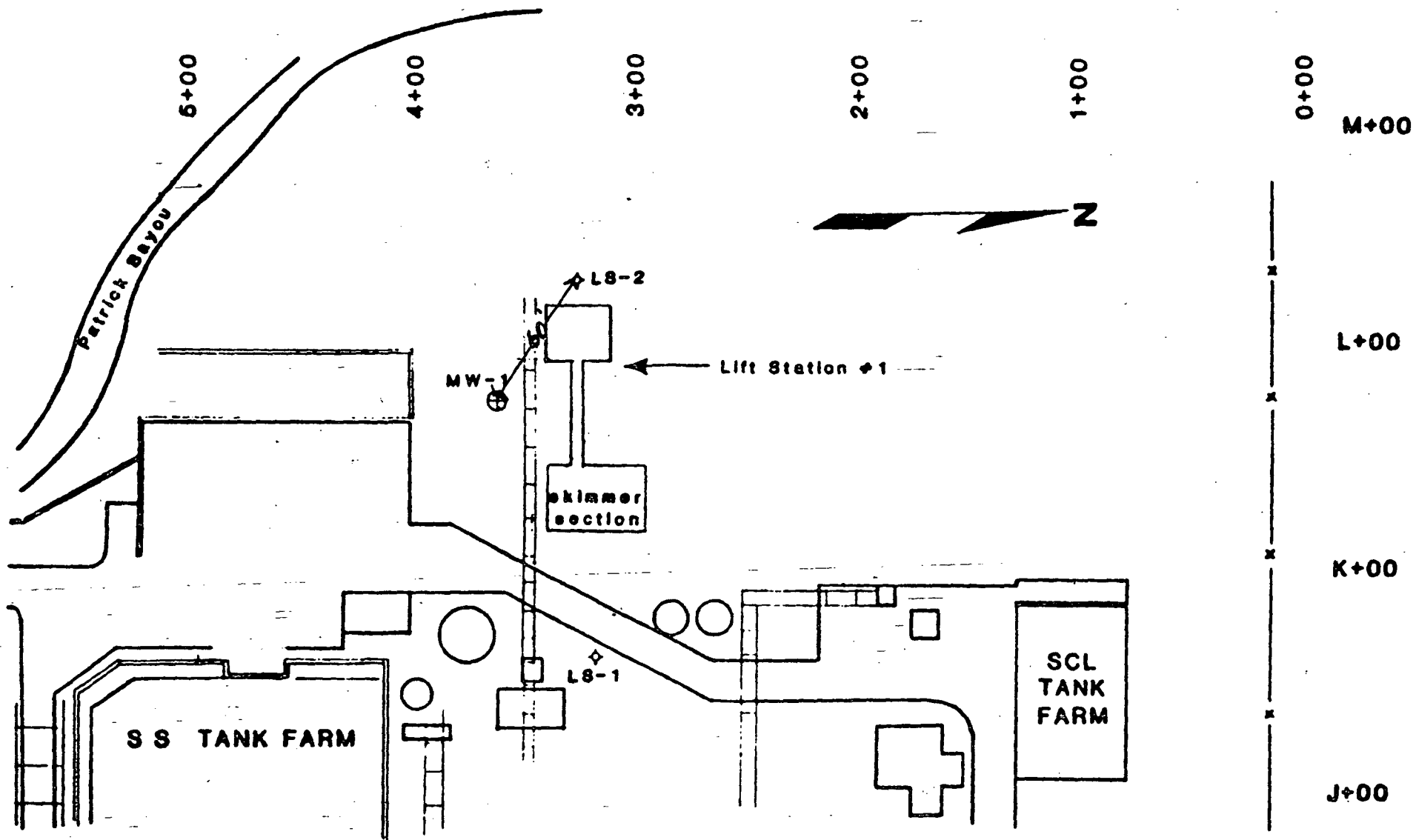
¹ from "Ground Water Compliance Plan Application and Technical Report" submitted by Lubrizol Corporation on February 5, 1986

² Calculated, see Attachment AE-VI

³ from Freeze and Cherry, 1979

TEXAS WATER COMMISSION
District No.

ATTACHMENT AE-VI
Horizontal Hydraulic Flow
Velocity Calculations



ATTACHMENT AL-I Site Diagram

LEGEND
 MW-1 ⊕ EXISTING MONITORING
 LS-1 ♦ PROPOSED MONITORING
 WELLS
 SCALE INDICATED BY GRID



LAW ENGINEERING TESTING COMPANY
 HOUSTON, TEXAS
 The LUBRIZOL CORPORATION
 DEER PARK, TEXAS

PROJECT
 FIGURE 1
 SITE PLAN
 LAW JOB No. HT-1660-86H

ATTACHMENT *AL-III*

Well Construction Diagrams



ERM-SOUTHWEST, INC.

Project LIFT STATION GYA

Owner LUBRIZOL CORPORATION

Location DEER PARK, TEXAS

W.O. Number 03-19

Well Number LS-1

Total Depth 20' Diameter 6"

Surface Elevation 23.48'

Water level: Initial ~4' 24 Hrs 3.74'

Screen Dia. 3"

Length 5' Slot Size 0.01"

Casing Dia. 3"

Length 17.56' Type SCH. 40 PVC

Drilling Company YOUNGER DRILLING

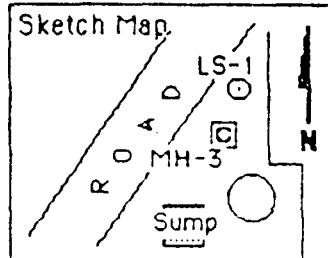
Drilling Method HOLLOW STEM AUGER

Driller -----

Log By S. CALHOUN

3/17/86
Date Drilled 3/18/86

Drilling Log



Notes

T.O.C. EL. 26.04'

DEPTH (Feet)	GRAPHIC LOG	Well Construction	Sample Type	Cohesive Strength (tons/sq. ft.)	Sample Interval (Ft.)	Description Interval (Ft.)	Description/Soil Classification (Color, Texture, Structures)
0					0.3-2'	0-0.3'	CRUSHED ROCK
2.5					2-4'	0.3-6.5'	SILTY CLAY FILL: Light orangish brown with tan and light gray mottling, occasional small gravel and fine sand laminations and pockets, soft and damp, no odor.
5					4-6'		4-6' More silty and softer with less gravel, wood fragments, saturated zones, no odor.
7.5					6-8'	6.5-15.5'	6-6.5' Dark gray to black. SILTY CLAY: Black and bluish gray mottled, plastic, damp, no odor.
10					8-10'		8-12' Becoming more light bluish gray with depth, stiffer and possibly less silty, small infrequent calcareous nodules, not saturated, no odor.
12.5					13-15'		12-15' Grades to light bluish gray and reddish brown mottled.
15						15.5-17.5'	SANDY CLAYEY SILT: Medium to light reddish brown, very fine sand, saturated, no odor.
17.5						17.5-20'	CLAY: Red with occasional bluish gray mottling, no silt, very stiff, fractured, infrequent lighter lithified zones.
20					18-20'		

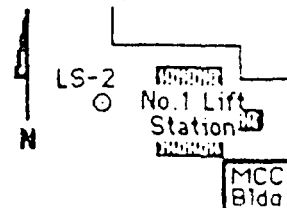


ERM-SOUTHWEST, INC.

Project LIFT STATION GWAOwner LUBRIZOL CORPORATIONLocation DEER PARK, TEXASW.O. Number 03-19Well Number LS-2Total Depth 22' Diameter 6"Surface Elevation 22.18'Water level: Initial ~8' 24 Hrs 6.28'Screen Dia. 3"Length 10' Slot Size 0.01"Casing Dia. 3"Length 13.81' Type SCH 40 PVCDrilling Company YOUNGER DRILLING Drilling Method HOLLOW STEM AUGERDriller -----Log By S. CALHOUNDate Drilled 3/17/86
3/18/86

Drilling Log

Sketch Map



Notes

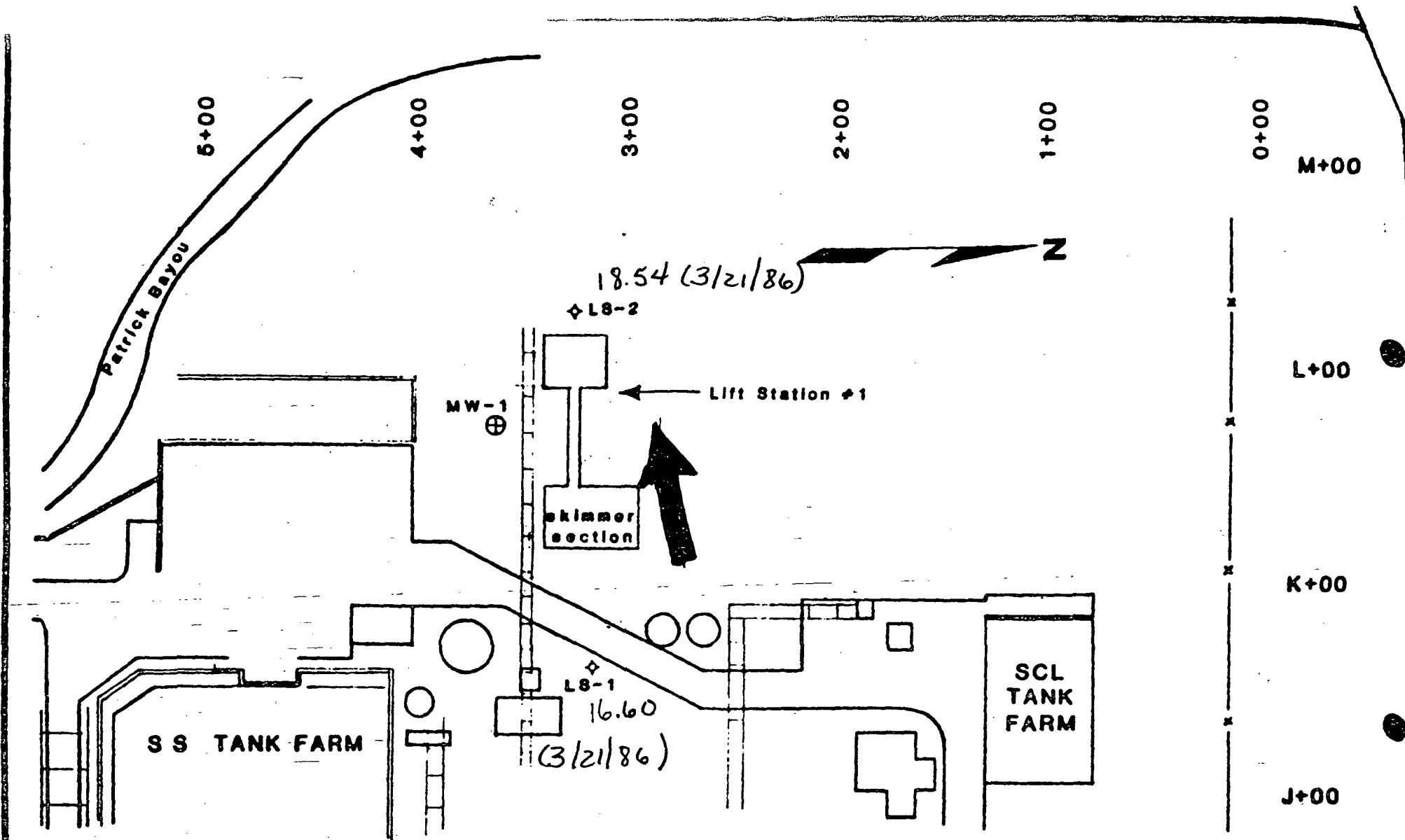
T.O.C. EL. 24.99'

DEPTH (Feet)	GRAPHIC LOG	Well Construction	Sample Type	Cohesive Strength (tons/sq. ft.)	Sample Interval (Ft.)	Description Interval (Ft.)	Description/Soil Classification (Color, Texture, Structures)
0					0-2'	0-3.5'	SILTY SANDY CLAY FILL: Medium to light brown with occasional light gray and black mottling, abundant shell fragments, soft, plastic, damp, slight odor, infrequent light brown sand seams and tan to light gray clay pockets.
2.5					2-4'		
						3.5-4'	
5					4-6'	4-9.5'	
					6-8'		FINE TO VERY FINE SAND FILL: Tan with greenish gray mottling, slightly silty, infrequent black stained pockets. SILTY CLAY FILL: Dark brown to light gray mottled, slightly sandy, occasional small gravel, shell fragments, and plant debris. Infrequent black staining with slight odor. 7-9.5' Similar to above with highly variable silt content, organic debris, sand pockets and seams, white silty pockets and fragments, very moist to saturated.
7.5					8-10'		
10					10-11'	9.5-13'	
					13-15'	13-18'	SILTY CLAY: Medium gray, abundant small white calcareous nodules, soft, plastic, damp, occasional small iron nodules. 15-18' Becomes tan to light brown and gray mottled, slightly sandy with abundant rootlets and rare yellowish tan clay pockets.
15					15-17'		
17.5					18-20'	18-21.5'	CLAY: Red and bluish gray mottled with calcareous nodules, frequent blocky irregular fragments, pockets and thin seams of dark brown to brownish gray silty clay to clayey silt, very soft, moist, rootlets.
20					20-22'	21.5-22'	
							CLAY: Red with greenish gray mottling, fractured, slickensides, very stiff, rootlets.

Attachment AL-IV Table of Well Construction Details

Well Number	LS-1	LS-2	MW-1					
Hole diameter	6"	6"						
Total depth	20'	22'						
Drill method	dry auger	dry auger						
Date drilled	3/17- 3/18/86	3/17- 3/18/86						
Casing I.D.	3"	3"						
Casing type	Sch 40 PVC	Sch 40 PVC						
How joined	threaded	threaded						
Stick-up length	2.56'	2.81'						
T.O.C.-MSL	26.04	24.99						
Ground level-MSL	23.48	22.18						
Capped/Lockable	Both	Both						
Surface pad size	unk	unk						
Depth of surface seal, feet below ground level	11'	8'						
Annulus Fill	bentonite grout	bentonite grout						
Depth-annulus seal, feet below ground level	11'	8'						
Depth-gravel pack, feet below ground level	13'	11'						
Length-gravel pack	7'	11'						
Size-gravel pack	unk	unk						
Depth to screen, feet below ground level	15'	12'						
Screen I.D./slot	3"/0.01"	3"/0.01"						
Screen type	Sch 40 PVC	Sch 40 PVC						
Screen length	5'	10'						
Blank length	0	0						
Development Method	airlift	airlift						

Comments: *Completion details for MW-1 are not available
at this time.



ATTACHMENT AL-V Potentiometric Surface Map*

LEGEND
 MW-1 ⊕ EXISTING MONITORING
 LS-1 ♦ PROPOSED MONITORING
 WELLS
 GRID INDICATED BY GRID



LAW ENGINEERING TESTING COMPANY
 HOUSTON, TEXAS
 The LUBRIZOL CORPORATION
 DEER PARK, TEXAS

PROJECT
 FIGURE 1
 SITE PLAN

LAW JOB No. HT-1569-88H

* insufficient data to
 accurately determine this direction

ATTACHMENT B-I

Facility Sampling Plan

THE LUBRIZOL CORPORATION DEER PARK MANUFACTURING FACILITY
GROUNDWATER MONITORING SAMPLING AND ANALYSIS PLAN

SAMPLING PROTOCOL

- I. LOG-WELL DATA. A field log is to be maintained by the collector to record all pertinent information regarding the bailing and sampling of the monitor wells. This recorded information may become necessary if testimony is required. The collector is to sign and date each page of the log (see Figure I).

The following data is to be determined and recorded upon bailing each well:

- A. Collector's name, date, and time that bailing was initiated and collected.
- B. Location - Site.
- C. Well Identification - i.e., monitor well number.
- D. Well Depth - Measure from the top to the bottom of the casing.
- E. Water Level Depth - Measure from the top of the well casing to the water surface.
- F. Well casing inside diameter.
- G. Calculate the Well Boring Volume - The amount of water occupying the well boring prior to bailing.

$$\text{Volume (Gallons)} = \frac{r^2 h}{2.31}$$

r = Inside well boring radius in inches.
h = Height of water in well in inches (well depth minus the water level depth).

- H. Comments - Information pertaining to the condition of the well, such as no cap, broken casing, grout deterioration, etc.

- II. WELL FLUSHING. Prior to sampling a monitor well, it should be flushed or bailed at least 24 hours (but not more than 48 hours) in advance.

- A. The requirements for flushing a well are as follows:
 - 1. For a slow recovering well, evacuate to dryness. If time permits, additional evacuation is suggested.
 - 2. For a rapidly recovering well, three well boring volumes are to be evacuated. See formula in Section I.G. Also, as water is bailed from the well, periodic measurements of temperature and pit are made. Stabilization of these parameters indicates that water is being drawn from the formation.

- B. To prevent well contamination, the following well flushing procedure is to be used:

A dedicated bailer of the same materials of construction as the well casing attached with a polyethylene cable. The bailer and polyethylene cable should only contact the internal well casing.

- C. All equipment, except that dedicated to the well, is to be washed before bailing each well. It is to be detergent washed, rinsed with tap water, deionized water, and chemically pure acetone, and allowed to air dry. See Section III.C.

III. CONTAINER PREPARATION

- A. The container is to be constructed of a material compatible and non-reactive with the material it is to contain. Consult Table 1 to determine the number, type and volume of containers needed. Metal lids should not be utilized. Plastic lids with polyethylene or teflon liners are acceptable in most cases.
- B. Individual containers are not necessarily required for each test. If two or more tests require the same container and preservation, and a container of sufficient size is available, the samples may be combined.
- C. The cleanliness of the containers, bailing and sampling equipment is most important. It is recommended that the bottles and the lids be hand washed with a liquid dishwashing detergent, rinsed in hot tap water, rinsed with chemically pure or reagent grade (C.P.) nitric acid, rinsed with distilled or deionized water and let to air dry. Glass bottles used to collect samples for the determination of organic compounds by GC or GC/MS analysis are to be kiln baked at 300°C. When the bottles are cool or completely dry, cap and store them in a clean and dry environment. Additionally, all equipment used to bail or sample a well must be cleaned in the same manner prescribed for cleaning the containers above, and stored in a clean and dry environment.
- D. One set of blank samples are to be prepared for each set of well samples. These are to be prepared by filling the clean bottles with distilled or deionized water, and adding the preservatives (if any) as indicated in Table 1 for each type of sample. These bottles are then to be labeled "blank" and the analysis to be performed indicated on each.

IV. SAMPLING THE MONITOR WELLS. The wells have been properly flushed or bailed, the containers and samplers prepared and the initial log data entered upon bailing.

- A. Determine the Water Level Depth - Record in the log.

- B. All non-dedicated equipment used to sample the well (e.g., bailer, funnel, etc.) is to be cleaned and stored as per the cleaning procedures outlined in Section III.C.
- C. The samples are to be withdrawn from the wells utilizing a clean or dedicated bailer or sampler attached to a clean polyethylene coated steel cable. The first bailer-full collected is to be used to rinse the bailer and discarded. Subsequent samples are to be containerized and preserved immediately according to the specific test requirements. Each container is to be filled to the top to preserve anaerobic conditions. Upon withdrawing the last bailer-full, wipe the cable with a clean cloth saturated with distilled or deionized water and C.P. acetone.
- D. The following determinations are to be made in duplicate in the field at the time of sampling and recorded in the log book.

— pH
 Temperature

Conductivity

V. FIELD RECORDS

- A. It is important to maintain an accurate and thorough field log in case required to recall particular information concerning bailing and sampling a monitor well. In addition to the log items covered in Section I, the following information is to be recorded at the time of sampling.
 - 1. Collector's name, date, and time.
 - 2. Water level depth.
 - 3. Reason for Sampling - e.g., quarterly sampling, special problem (define), initiator requesting the well sampling.
 - 4. Sample Source - Well number, sample number.
 - 5. Sample pH, temperature, conductivity.
 - 6. Sample Observations - Color, turbidity, odor, sediment, surface oil, etc.
 - 7. Sample volume, containers, preservatives.
 - 8. Test to be performed on each sample.
 - 9. Weather conditions at the time of sampling.

10. Additional Comments or Recommendations - e.g., split samples (with whom), re-sampling, equipment failures, etc.

- B. The Sample is to be Sealed to Protect its Worth - The collector is to date, sign and identify the sample on the seal and attach it to the container and lid. A weatherproof adhesive seal and pen is to be used.
- C. A sample label is to be used on each sample container. The following is to be indicated on the label:

- 1. Collector's name, date, and time.
- 2. Sample source (monitor well number).
- 3. Sample number.
- 4. Sample preservatives.
- 5. Test(s) to be performed.

VI. CHAIN OF CUSTODY. Proper chain of custody records are necessary for all samples.

- A. A chain of custody record (Figure II) is to be completed for each sample.
- B. A copy of the completed chain of custody record is to be retained. The original accompanies the sample to the laboratory which performs the analyses.
- C. Upon receipt of the samples, the laboratory manager or his representative is to complete the chain of custody record, make a copy for his files, and return the original with the analytical data to the initiator.

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TABLE 1
RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

MEASUREMENT	VOLUME (ml) REQUIRED	CONTAINER	PRESERVATIVE	HOLDING TIMES	REF.
PHYSICAL PROPERTIES					
Color	50	P, G	Cool, 4°C	48 Hours	1
Conductance	100	P, G	Cool, 4°C	28 Hours	1
Acidity	100	P, G	Cool, 4°C; HNO ₃ to pH less than 2	6 Months	1
Residue:	200	G Only	Cool, 4°C	24 Hours	1
Filterable	50	P, G	None	Det. on Site	1
Non-Filterable	200	P, G	Cool, 4°C	7 Days	1
Total	200	P, G	Cool, 4°C	7 Days	1
Volatile	100	P, G	Cool, 4°C	7 Days	1
Stable Matter	1000	P, G	Cool, 4°C	48 Hours	1
Temperature	1000	P, G	None	Det. on Site	1
Stability	1000	P, G	Cool, 4°C	48 Hours	1
INORGANICS (EXCEPT MERCURY)					
Dissolved	200	P, G	Filter on Site; HNO ₃ to pH less than 2	6 Months	1, 3
Suspended	200	P, G	Filter on Site	6 Months	1, 3
Total	200	P, G	HNO ₃ to pH less than 2	6 Months	1, 3
Mercury-Dissolved	300	P, G	Filter on Site; HNO ₃ to pH less than 2	28 Days	1, 3
Total	300	P, G	HNO ₃ to pH less than 2	28 Days	1
Chromium (Hexavalent)	200	P, G	Cool, 4°C	24 Hours	2
ORGANICS, NON-METALLICS					
Acidity	200	P, G	Cool, 4°C	14 Days	1
Alkalinity	200	P, G	Cool, 4°C	14 Days	1
Ammonia	25	P Only	Cool, 4°C	28 Days	2
Bromide	200	P, G	None	28 Days	1
Chloride	200	P, G	None	28 Days	1
Fluoride	200	P, G	None	Det. on Site	1
MEASUREMENT					
Nitrides	500	P, G	Cool, 4°C; NaOH to pH greater than 12	14 Days	1, 3
Nitrate	50	P, G	None	28 Days	1
Nitrite	100	P, G	Cool, 4°C	24 Hours	1
Nitrogen Ammonia	400	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Formaldehyde, Total	500	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Nitrate Plus Nitrite	200	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Nitrate	100	P, G	Cool, 5°C	48 Hours	1

TABLE 1 (Cont'd)
RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

MEASUREMENT	VOLUME (ml) REQUIRED	CONTAINER ¹	PRESERVATIVE	HOLDING TIMES	REF.
rite	50	P, G	Cool, 4°C	48 Hours	1
olved Oxygen Probe	300	G Only	None	Det. on Site	1
kler	300	G Only	Fix on Site	8 Hours	1
osphorus Ortho- osphate, Dissolved	100	P, G	Filter on Site; Cool, 4°C	48 Hours	1
rolyzable	100	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
al	100	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
al Dissolved	100	P, G	Filter on Site; Cool, 4°C	24 Hours	1
lica	50	P Only	Cool, 4°C	28 Days	1
fate	100	P, G	Cool, 4°C	28 Days	1
fide	250	P, G	Cool, 4°C; 2 ml zinc acetate plus NaOH to pH less than 9	7 Days	1, 3
lfite	100	P, G	None	Det. on Site	1
ANICS					
D	1000	P, G	Cool, 4°C	48 Hours	1
D	50	P, G	H ₂ SO ₄ to pH less than 2	28 Days	1
l & Grease	1000	G Only	Cool, 4°C; H ₂ SO ₄ or HCl to pH less than 2	28 Days	1
ganic Carbon	100	G Only Teflon Cap Liner	Cool, 4°C; H ₂ SO ₄ or HCl to pH less than 2	28 Days	1
enolics	1000	G Only	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
AS	1000	P, G	Cool, 4°C	48 Hours	1
X	250	G Only Teflon Cap Liner	Cool, 4°C; HNO ₃ to pH less than 2	28 Days	2, 3
P Herbicide/Pesticide	1500	G, Teflon Cap Liner	Cool, 4°C	7 Days ² 30 Days ³	2, 3
ganic Priority	3000	G, Teflon	Cool, 4°C	14 Days ²	
llutants		Cap Liner		40 Days ³	3
olatile Organics	100	G, Telfon	Cool, 4°C	14 Days	3
	2 Vials	Septum Cap			

Plastic (P) or Glass (G). For metals, polyethylene with all polypropylene cap is preferred.

Holding time for extraction.

Holding time for analysis.

TABLE 1 (Cont'd)
RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

REFERENCES:

1. Methods for Chemical Analysis of Water and Wastes, December 1982, USEPA, 600/4-82-055.
2. Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, APHA, AWWA, WPCF.
3. Test Methods for Evaluating Solid Waste, Physical/Chemical Method, July 1982, 2nd Edition, USEPA, SW 846.

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TABLE 2
METHODS OF ANALYSIS

<u>PARAMETER</u>	<u>METHOD</u>
Total Organic Carbon	EPA 415.1
Phenols and Cresol (Acid Extractable Fraction)	EPA 625
Napthalene (Base/Neutral)	EPA 625
Barium	EPA, 1979

FIGURE 1
FIELD LOG

Site: _____ Location: _____
Collector/Operator: _____ Recra #: _____ Shuttle #: _____
Type of Sample: _____ () Grab () Composite () Other
Method of Sampling if Other Than Monitor Well: _____ Date/Time: _____

MONITOR WELL INFORMATION

Evacuation: Date/Time: _____ Method of Evac.: _____
Top of Casing to Water Level: _____ Top of Casing to Bottom: _____
Gallons Per Well Volume: _____ Total Gallons Evac.: _____
Water Level Following Evac: _____ Evacuation Complete-Time: _____

Sampling: Date/Time: _____ Method of Sampling: _____
Top of Casing to Water Level: _____
Sampling Complete-Time: _____

SAMPLE DATA

Field Replicate #1 Temp.: _____ pH: _____ Conductivity: _____
Field Replicate #2 Temp.: _____ PH: _____ Conductivity: _____

GENERAL INFORMATION

Weather Conditions at Time of Sampling: _____
Sample Characteristics: _____
Containers and Preservatives: _____
Comments and Observations: _____
Recommendations: _____

Certification: _____
(Signed) (Date)

FIGURE 2
CHAIN OF CUSTODY

Shuttle No.: _____ Prepared/Sealed By: _____
(Print Name)

Laboratory: _____
(Signature)

SHIP TO

Company: _____ Attention: _____
Address: _____ Phone No.: _____

SAMPLE IDENTIFICATION

Facility/Site: _____
Sample Source: _____ Sample Code: _____

SHUTTLE CONTENTS

No. of Containers	Size	Type	P-Plastic G-Glass	Preservative/Remarks

(1) Shuttle received at lab by: _____ (Print Name)	Date	Time	Seal Intact: <input type="checkbox"/> Yes <input type="checkbox"/> No Lab's Name: _____ (Signature)
---	------	------	---

(2) Shuttle opened for analysis by: _____ (Print Name)	Date	Time	Remarks: _____ _____ (Signature)
---	------	------	--

Texas Water Commission Sample Schedule

Well Number	C.O.C Tag Sample No.	Analysis	Type of Container	Preservative	Time	°C T	pH	SC	Appearance	Water Depth	Stand Pipe
LS-2	SW09438	GCHS	glass w/ Teflon liner	ice	11:25A	24	7.28	4500	Silty	9'5.3"	~2'3"
	GW03568	SO ₄ , Cl, Ca, Mg, Na, HCO ₃	plastic	ice							
	HM11857	Cr, As, Pb	plastic	HNO ₃							
	AT23275	VOA	VOA vial	ice							
	AT23282	TOC	plastic	H ₂ SO ₄							
MW-1	SW09439	GCHS	glass w/ Teflon liner	ice	12:02P	24	7.03	1750	clear	10'9.2"	~2'1/2"
	GW03575	Ca, Mg, Na, HCO ₃ , SO ₄ , Cl	plastic	ice							
	HM11858	Cr, As, Pb	plastic	HNO ₃							
	AT23276	VOA	VOA vial	ice							
	AT23309	TOC	plastic	H ₂ SO ₄							
LS-1	SW09437	GCHS	glass w/ Teflon liner	ice	12:26P	27	7.02	1900	Silty	6'6.5"	~2'4"
	GW03560	Ca, Mg, Na, HCO ₃ , SO ₄ , Cl	plastic	ice							
	HM11856	Cr, As, Pb	plastic	HNO ₃							
	AT23274	VOA	VOA vial	ice							
	AT23281	TOC	plastic	H ₂ SO ₄							
EQ2	SW09435	GCHS	glass w/ Teflon liner	ice	2:47P	24	6.29	40,000	slight green color	14'1.6"	~1'10"

ATTACHMENT B-II

Texas Water Commission Sample Schedule

Well Number	C.O.C Tag Sample No.	Analysis	Type of Container	Preservative	Time	°C T	pH	SC	Appearance	Water Depth	Stand Pipe
EQ2	GW03524	SO ₄ , HCO ₃ , Cl, Ca, Mg, Na	plastic	ice							
	HM11854	As, Cr, Pb	plastic	HNO ₃							
	AT23272	VOA	VOA vial	ice							
	AT23279	TDC	plastic	H ₂ SO ₄							
AE2	SW09434	GCHS	glass w/ Teflon liner	ice	3:49P	24	7.09	8100	clear	7'9.1" ~2'	
	GW03523	SO ₄ , HCO ₃ , Cl, Ca, Mg, Na	plastic	ice							
	HM11853	As, Cr, Pb	plastic	HNO ₃							
	AT23271	VOA	VOA vial	ice							
	AT23278	TDC	plastic	H ₂ SO ₄							

ATTACHMENT B-II(cont'd)

3/21 Arrive Labuigal 9:03
met w/ Bob Cope

LS-2 Depth to water 9'5.3"
Stick up 2' 1/4" from top of pad
Depth to bottom
Sampling time 11:25 A
pH 7.28
Spec. Cond. 4500
Temp 24°C

Observations:

Water depth w/ E-line (Slope
Indicator Co. 51453)

Discreet bailer to evacuate
evacuated 3 casing volumes
(~16 gals), well recharges
slow (bailer will be
dedicated); capped, will
be locked

pH meter La Motte Chemical
Spec Cond Yellow Springs Instrument Co.
Model 33

ATTACHMENT B-III

TWC Field Notes

MW - 1

- Depth to water - 10' 7.2" -
- W/E line - rinsed w/ Deionized water
prior to use
- Stick up 2' 3/8"
- Depth to bottom
- Sampling time 12:02P
- pH 7.03
- Specific Cond. 1750
- Temp 24°C

- Observations -

Fuji Robin pump Mol. P SD04-28
 Flow capacity 35 gpm (~5-10 gpm at depth)
 pressure 60 psi
 total head 132 ft
 pump started: 10:21
 pump stopped: 10:37

- 3 Volumes ~ 39 gallons evacuated
 pumped dry at ~ 2.5 casing vols

LS-1

Depth to water 6' 6.5"
Stick-up 2' from pad (4' pad)
Depth to bottom
Sampling time 12:26 P
pH 7.02
S.C. 1900
Temp 27°C
Observations: w. 8-line, ~18 gals
with dissect bailer (will be
dissected)

Break for lunch 12:51, back at
1:58

EQ2 Depth to water 14' 1.6"
 stick up 1' 10 1/4" (approx)
 sampling time 2:47
 PH 6.29
 SC 40000
 Temp 24°C
 observations - bailed 15 gals,
 quick recovery, dedicated
 bailer (not kept in well but
 in storage shed), capped,
 not locked.

AE2 Depth to water 7' 2.1"
 stick up 2'
 sampling time 3:49P
 PH 7.09
 SC 8100
 Temp 24°C
 observations - 29 gals bailed,
 dedicated bailer (Kept in shed)

TABLE 1
RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

MEASUREMENT	VOLUME (ml)	CONTAINER	PRESERVATIVE	HOLDING TIMES	REF.
PHYSICAL PROPERTIES					
Color	50	P, G	Cool, 4°F	48 Hours	1
Conductance	100	P, G	Cool, 4°C	28 Hours	1
Acidity	100	P, G	Cool, 4°C; HNO ₃ to pH less than 2	6 Months	1
Residue	200	G Only	Cool, 4°C	24 Hours	1
	50	P, G	None	Det. on Site	1
Filterable	200	P, G	Cool, 4°C	7 Days	1
Non-Filterable	200	P, G	Cool, 4°C	7 Days	1
Total	200	P, G	Cool, 4°C	7 Days	1
Volatile	100	P, G	Cool, 4°C	7 Days	1
Settleable Matter	1000	P, G	Cool, 4°C	48 Hours	1
Temperature	1000	P, G	None	Det. on Site	1
Turbidity	1000	P, G	Cool, 4°C	48 Hours	1
INORGANICS (EXCEPT MERCURY)					
Dissolved	200	P, G	Filter on Site; HNO ₃ to pH less than 2	6 Months	1, 3
Suspended	200	P, G	Filter on Site	6 Months	1, 3
Total	200	P, G	HNO ₃ to pH less than 2	6 Months	1, 3
Mercury-Dissolved	300	P, G	Filter on Site; HNO ₃ to pH less than 2	28 Days	1, 3
Total	300	P, G	HNO ₃ to pH less than 2	28 Days	1
Chromium (Hexavalent)	200	P, G	Cool, 4°C	24 Hours	2
ORGANICS, NON-METALLICS					
Acidity	200	P, G	Cool, 4°C	14 Days	1
Alkalinity	200	P, G	Cool, 4°C	14 Days	1
Ammonia	25	P Only	Cool, 4°C	28 Days	2
Bromide	200	P, G	None	28 Days	1
Chloride	200	P, G	None	28 Days	1
Fluorine	200	P, G	None	Det. on Site	1
MEASUREMENT					
Nitrides	500	P, G	Cool, 4°C; NaOH to pH greater than 12	14 Days	1, 3
Bromide	50	P, G	None	28 Days	1
Chloride	100	P, G	Cool, 4°C	24 Hours	1
Nitrogen Ammonia	400	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Formaldehyde, Total	500	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Nitrate Plus Nitrite	200	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Nitrate	100	P, G	Cool, 5°C	48 Hours	1

ATTACHMENT C-I
Tabulation of Analytical
Methods

TABLE 1 (Cont'd)
RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

MEASUREMENT	VOLUME (ml) REQUIRED	CONTAINER ¹	PRESERVATIVE	HOLDING TIMES	REF.
Free	50	P, G	Cool, 4°C	48 Hours	1
Dissolved Oxygen Probe	300	G Only	None	Det. on Site	1
Winkler	300	G Only	Fix on Site	8 Hours	1
Phosphorus Ortho- phosphate, Dissolved	100	P, G	Filter on Site; Cool, 4°C	48 Hours	1
Stabilizable	100	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Sal	100	P, G	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
Sal Dissolved	100	P, G	Filter on Site; Cool, 4°C	24 Hours	1
Silica	50	P Only	Cool, 4°C	28 Days	1
Sulfate	100	P, G	Cool, 4°C	28 Days	1
Sulfide	250	P, G	Cool, 4°C; 2 ml zinc acetate plus NaOH to pH less than 9	7 Days	1, 3
Sulfite	100	P, G	None	Det. on Site	1
ORGANICS					
Oil	1000	P, G	Cool, 4°C	48 Hours	1
Oil	50	P, G	H ₂ SO ₄ to pH less than 2	28 Days	1
Oil & Grease	1000	G Only	Cool, 4°C; H ₂ SO ₄ or HCl to pH less than 2	28 Days	1
Organic Carbon	100	G Only Teflon Cap Liner	Cool, 4°C; H ₂ SO ₄ or HCl to pH less than 2	28 Days	1
Organics	1000	G Only	Cool, 4°C; H ₂ SO ₄ to pH less than 2	28 Days	1
AS	1000	P, G	Cool, 4°C	48 Hours	1
Acid	250	G Only Teflon Cap Liner	Cool, 4°C; HNO ₃ to pH less than 2	28 Days	2, 3
Herbicide/Pesticide	1500	G, Teflon Cap Liner	Cool, 4°C	7 Days ² 30 Days ³	2, 3
Organic Priority	3000	G, Teflon	Cool, 4°C	14 Days ²	
Plutants		Cap Liner		40 Days ³	3
Volatile Organics	100	G, Teflon	Cool, 4°C	14 Days	3
	2 Vials	Septum Cap			

Plastic (P) or Glass (G). For metals, polyethylene with all polypropylene cap is preferred.

Holding time for extraction.

Holding time for analysis.

TABLE 1 (Cont'd)
RECOMMENDED CONTAINERIZATION AND PRESERVATION OF SAMPLES

REFERENCES:

1. Methods for Chemical Analysis of Water and Wastes, December 1982, USEPA, 600/4-82-055.
2. Standard Methods for the Examination of Water and Wastewater, 15th Edition, 1980, APHA, AWWA, WPCF.
3. Test Methods for Evaluating Solid Waste, Physical/Chemical Method, July 1982, 2nd Edition, USEPA, SW 846.

FGH:d11
0006f
7/31/85

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536
ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

MUS CLIENT NO: 282501
MUS SAMPLE NO: 23041130
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: AE-2

04/23

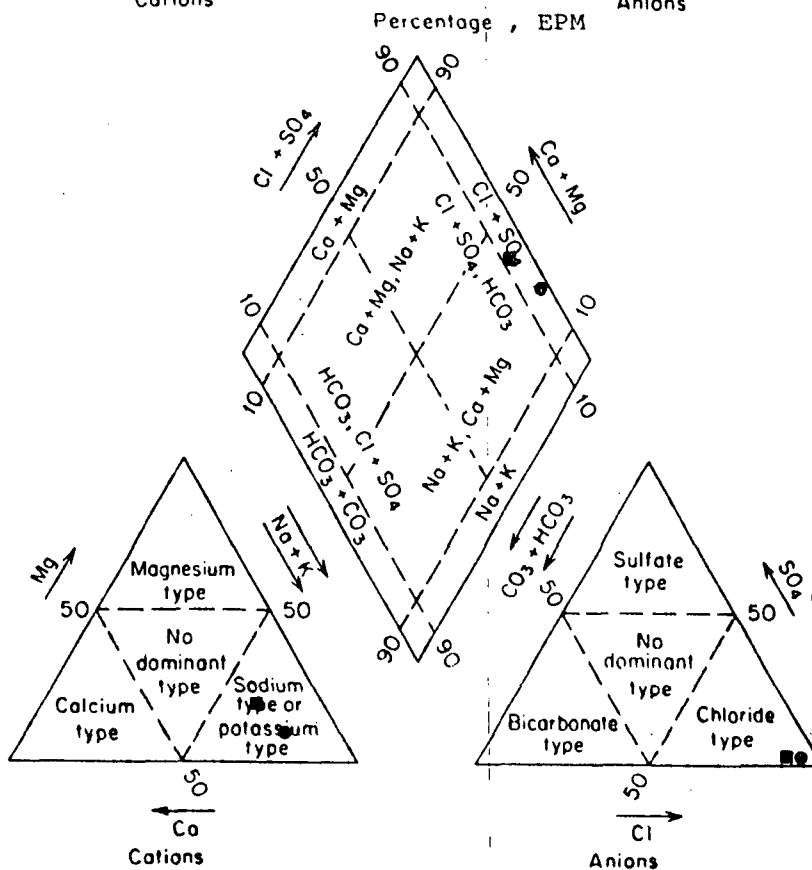
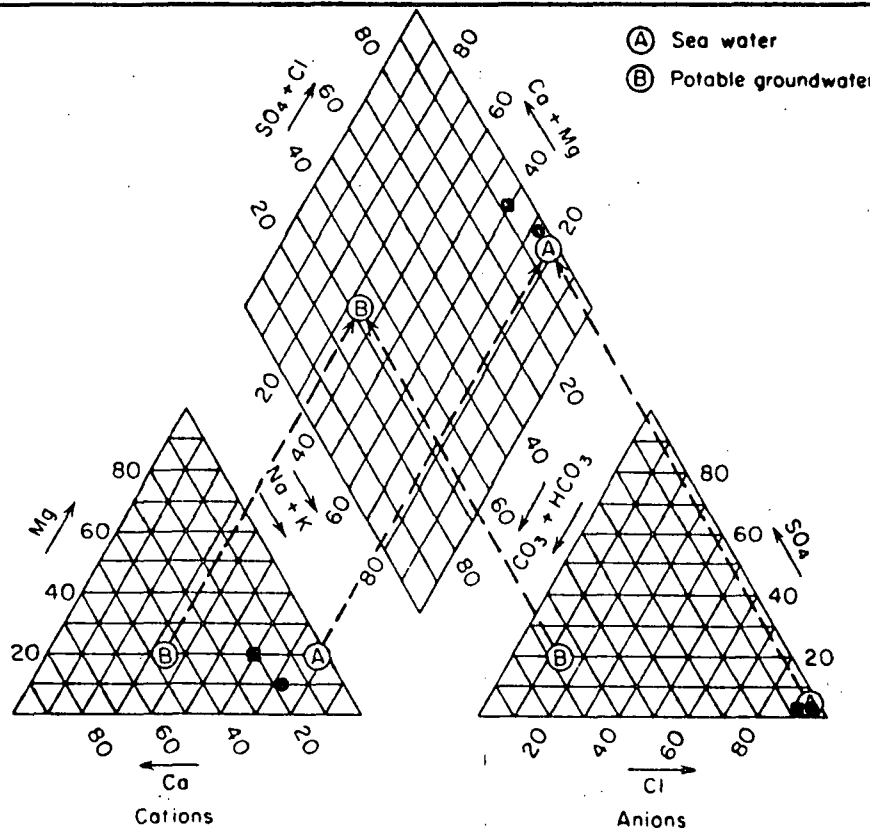
TEST	DETERMINATION	RESULTS	UNITS
W270	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	500,000	col/100ml
M030	Arsenic (As)	(0.01	ug/l
M040	Barium (Ba)	0.9	ug/l
M090	Cadmium (Cd)	(0.005	ug/l
M140	Chromium (Cr)	(0.03	ug/l
M200	Lead (Pb)	(0.05	ug/l
M250	Mercury (Hg)	(0.0002	ug/l
M290	Selenium (Se)	(0.01	ug/l
M300	Silver (Ag)	(0.02	ug/l
OH10	2,4-D	(100	ug/l
OH15	2,4,5 TP(Silvex)	(10	ug/l
OP51	Lindane	(4	ug/l
OP52	Endrin	(0.2	ug/l
OP53	Methoxychlor	(100	ug/l
OP54	Toxaphene	(5	ug/l
W300	Fluoride, Soluble (F)	1.2	ug/l
W390	Nitrate (N)	(0.1	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	0.88	ug/l
M240	Manganese (Mn)	0.32	ug/l
M310	Sodium (Na)	370	ug/l
W130	Chloride (Cl)	900	ug/l
W500	Phenolics	0.13	ug/l
W730	Sulfate, Turbidimetric (SO4)	43	ug/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	10	ug/l
W315	Halogens, Total Organic (TOX)	92	ug/l
W490	pH	7.4	
W700	Specific Conductance @ 25C	19,000	umhos/cm

REMARKS:

*ATTACHMENT C-II
Example of Analytical Results
as Reported by the Laboratory to the
Operator*

Reviewed and Approved by: DM

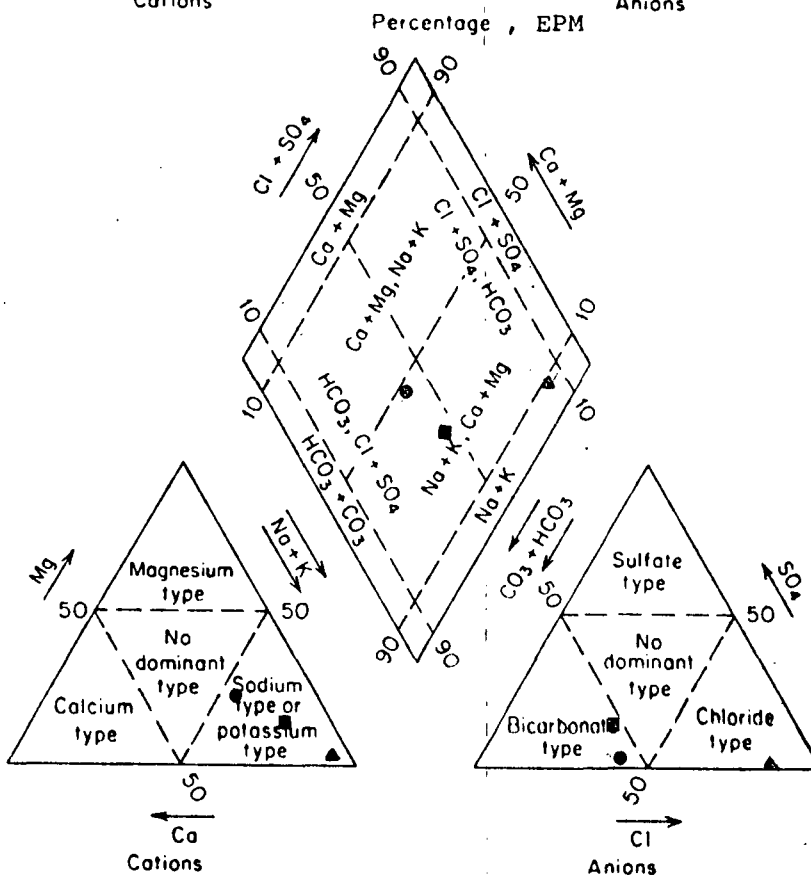
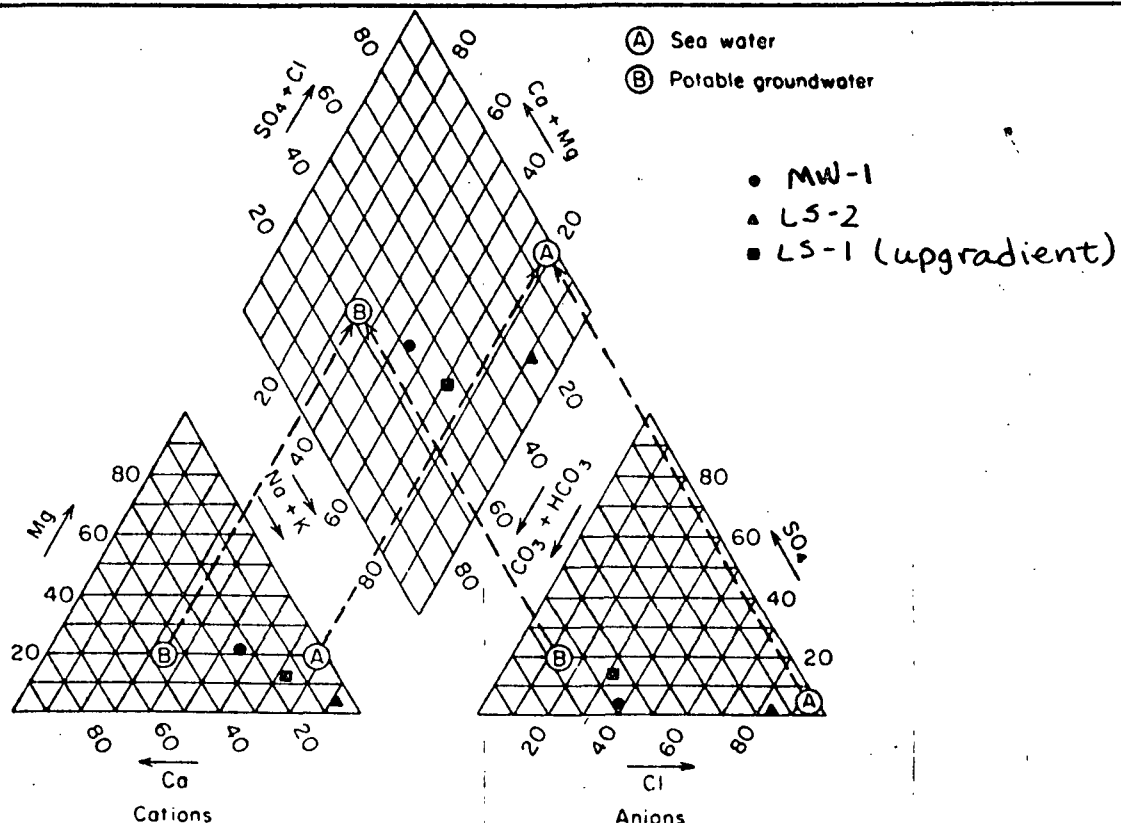
<u>Well</u> <u>No.</u>	<u>Owner</u>	<u>Depth</u> <u>of well</u> <u>(ft)</u>	<u>Date of</u> <u>collection</u>	<u>mg/l</u> Cal- cium (Ca)	<u>mg/l</u> Magne- sium (Mg)	<u>mg/l</u> Sodium (Na)	<u>mg/l</u> Potas- sium (K)	<u>mg/l</u> Bicar- bonate (HCO ₃)	<u>mg/l</u> Sulfate (SO ₄)	<u>mg/l</u> Chloride (Cl)	<u>Fluor-</u> <u>ide</u> (F)	<u>Nitrate</u> (NO ₃)	<u>Dissolved</u> <u>solids</u> (sum)	<u>Total hardness</u> <u>as CaCO₃</u>	<u>Spec. Cond.</u> (mmhos at 25°C) <u>Field</u>	<u>pH</u> <u>Field</u>	<u>μg/l</u> As	<u>μg/l</u> Cr	<u>μg/l</u> Pb	<u>TOC</u>
LS2	Lubrizol		3/21/86	40	29	1015		722	5	1288			2762		4500	7.28	23	59	<100	
MW1			3/21/86	80	45	232		614	34	245			940		1750	7.03	<25	<40	<100	
LS1			3/21/86	59	30	315		604	140	218			1062		1900	7.02	100	61	<100	
EQ2			3/21/86	1120	402	5790		603	6	11816			19482		40000	6.29	140	<40	<100	
AE2			3/21/86	312	189	1103		354	77	2565			4423		8100	7.09	<25	<40	<100	



After Freeze and Cherry, (1979),
pgs 250 and 252.

TEXAS WATER COMMISSION
District No. Central Office

ATTACHMENT C-V
Piper Tri-linear Diagrams
Equalization Basin



TEXAS WATER COMMISSION
 District No. Central Office

ATTACHMENT C-IV (cont'd)

Piper Tri-linear Diagrams
 Lift Station

After Freeze and Cherry, (1979),
 pgs 250 and 252.

No. **GW 03524**

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station
Austin, Texas 78711Org. No. 444
Sample No. _____Owner Lubrizol Corp Address _____ Zip _____County Harris Well No. EQ2Location 30324

Date Drilled _____ Depth _____ Aquifer _____

Water Level _____ Sample After Pumping _____ Mins. (Hrs.) Yield _____ GPM Temperature _____ °F

Point of Collection _____ Appearance _____ Clear _____ Turbid _____ Color _____

Use _____ Remarks _____ (Over)

Date Collected 3/21/86 Time 2:47 P By CBSend copy of completed analysis to Carol Boucher TDWR Office No. 1115

TDWR-0778 (Rev. 10-24-84)

No. **GW03524**

TEXAS DEPARTMENT OF WATER RESOURCES

Point of Collection EQ2 CS P.O. Box 13087, Capitol Station
Austin, Texas 78711Work No. 9097
Org. No. 444
Sample No. _____Lab Used TDH Lab No. EW 1368 Method of Preservation IceType of Facility SI Date Completed 3/31/86 Analyst's Signature ML

	Mg/l	EPM		Mg/l	EPM	Other Ions	Mg/l
Chloride			Carbonate			<input type="checkbox"/>	
Calcium	<u>1120</u>	<u>56.02</u>	Bicarbonate	<u>603</u>	<u>9.88</u>	<input type="checkbox"/>	
Magnesium	<u>402</u>	<u>33.03</u>	Sulfate	<u>6</u>	<u>0.13</u>	<input type="checkbox"/>	
Sodium	<u>5790</u>	<u>251.74</u>	Chloride	<u>11861</u>	<u>334.40</u>	<input type="checkbox"/>	
Total		<u>340.76</u>	Fluoride			<input type="checkbox"/>	
<input type="checkbox"/> Potassium			Nitrate-N			<input type="checkbox"/>	
<input type="checkbox"/> Boron			pH			<input type="checkbox"/>	
<input type="checkbox"/> Iron			Total	<u>19482</u>	<u>344.40</u>	<input type="checkbox"/>	
Remarks			Dissolved Solids (sum)				
			Residual Alkalinity as CaCO₃				
			Total Alkalinity as CaCO ₃				
			Total Hardness as CaCO ₃				
			Specific Conductance (micromhos/cm)				
			Diluted Conductance (micromhos/cm)				

* Items will be analyzed if checked, total Iron requires separate sample.

TDWR 0778 (Rev. 10-24-84)

TDVVR-0287

No. HM 11854

District C. C.

County Harris Basin

~~Discharger Name:~~

Time Collected 2:47 P

Plant Name Lubrizol Corp 30324

Point of Collection MW-EQ2

Method of Flow Measurement.

PERMIT NUMBER				PAGE NO.		CARD TYPE	DATE			MAT. STAMP	Chlorine Contact Time																								
							Mo.	Day	Yr.		Date Shipped <u>3/21/86</u>																								
1				9	10	12	13	14	15	16	17	18	19	20	Collector's Signature <u>C. Bouch</u>																				
21 CODE				26 PARAMETER VALUE				35 CODE				40 PARAMETER VALUE				49 CODE				54 PARAMETER VALUE 62															
Flow (gpd)												Water Temperature (°F)												pH											
0 0 0 5 6												0 0 0 1 1												0 0 4 0 0											
D.O. (mg/l)												Turbidity (JTU)																							
0 0 3 0 0												0 0 0 7 0																							

TEXAS DEPARTMENT OF WATER RESOURCES

No. HM 11854

District C.O.

Lab Used TDH

EW61372

Type Sample: Heavy Metals

Material Sampled: Raw, Partially Tre

Method of Preservation HNO_3 pH < 2

Grab Builer

Composite

Hr.

Type Facility SI

Observations

Auxiliary Tags

Date Completed 2-11-68

Analyst's Signature _____

21 CODE	26 PARAMETER VALUE	35 CODE	40 PARAMETER VALUE	49 CODE	54 PARAMETER VALUE 62
Arsenic	μg/l	Barium			
	140				
Cadmium		Chromium	μg/l	Copper	
			< 40		
Lead	μg/l	Manganese		Manganese	
	< 100				
Nickel		Selenium		Silver	
Zinc					

No. **GW 03523**

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station
Austin, Texas 78711Org. No. 444
Sample No. _____

Owner Lubrizol Corp Address _____ Zip _____
 County Harris Well No. AE2
 Location 30324
 Date Drilled _____ Depth _____ Aquifer _____
 Water Level _____ Sample After Pumping _____ Mins. (Hrs.) Yield _____ GPM Temperature _____ °F
 Point of Collection _____ Appearance _____ Clear _____ Turbid _____ Color _____
 Use _____ Remarks _____ (Over)
 Date Collected 3/21/86 Time 3:44P By Carol Boucher
 Send copy of completed analysis to Carol Boucher TDWR Office No. 1115
 TDWR-077B (Rev. 10-24-84)

No. **GW 03523**

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station

Work No. 9097
Org. No. 444
Sample No. _____Point of Collection AE2Lab Used TDH Lab No. FW 367 Method of Preservation Ice197 Type of Facility SI Date Completed MAR 31 '86 Analyst's Signature ML

	Mg/l	EPM		Mg/l	EPM	Other Ions	Mg/l
Calcium			Carbonate			<input type="checkbox"/>	
Calcium	<u>312</u>	<u>15.60</u>	Bicarbonate	<u>354</u>	<u>5.80</u>	<input type="checkbox"/>	
Magnesium	<u>189</u>	<u>15.58</u>	Sulfate	<u>77</u>	<u>1.60</u>	<input type="checkbox"/>	
Sodium	<u>1103</u>	<u>47.96</u>	Chloride	<u>2565</u>	<u>72.31</u>	<input type="checkbox"/>	
Total	<u>29.15</u>		Fluoride			<input type="checkbox"/>	
<input type="checkbox"/> Potassium			Nitrate-N			<input type="checkbox"/>	
<input type="checkbox"/> Boron			Total	<u>79.22</u>		<input type="checkbox"/>	
<input type="checkbox"/> Iron			Dissolved Solids (sum)	<u>4423</u>			
Remarks _____			Phenolphthalein Alkalinity as CaCO ₃				
			Total Alkalinity as CaCO ₃				
			Total Hardness as CaCO ₃				
			Specific Conductance (micromhos/cm)				
			Diluted Conductance (micromhos/cm)				

"I" Items will be analyzed if checked, total Iron requires separate sample.

TDWR 077B (Rev. 10-24-84)

TDWR-0287

County Harris Basin

Time Collected 3:49 P

Point of Collection MW-AE2

Method of Flow Measurement

PERMIT NUMBER					PAGE NO.		CARD TYPE	DATE			MAT. STAMP	Chlorine Contact Time													
								Mo.	Day	Yr.		Date Shipped 3/21/86													
1					9	10	12	13	14	15	16	17	18	19	20	Collector's Signature <i>C. Bouch</i>									
									032186																
21 CODE				26 PARAMETER VALUE				35 CODE				40 PARAMETER VALUE				49 CODE				54 PARAMETER VALUE 62					
Flow (gpd)								Water Temperature (°F)								pH									
0 0 0 5 6								0 0 0 1 1								0 0 4 0 0									
D.O. (mg/l)								Turbidity (JTU)																	
0 0 3 0 0								0 0 0 7 0																	

Lab Used TDH

District C.O.

Lab. No. _____

FW6 1366

Material Sampled: Raw, Partially Treated, Fully Treated

Grab Bailer

Method of Preservation AN₃ pH 6.2

Grab Baker Composite _____ Hr _____

Type Facility SI

Observations

Auxiliary Tags

Date Completed 2/11/00

Analyst's Signature

21 CODE	26 PARAMETER VALUE	35 CODE	40 PARAMETER VALUE	49 CODE	54 PARAMETER VALUE 62
Arsenic	µg/l	Barium			
	< 25				
Cadmium		Chromium	µg/l	Copper	
			< 40		
Lead	µg/l	Manganese		Mercury	
	< 700				
Nickel		Selenium		Silver	
Zinc					

No. **GW 03568**

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station
Austin, Texas 78711Org. No. 444

Sample No. _____

Owner Lubrizol Corp Address _____ Zip _____County Harris Well No. LSZLocation 30324

Date Drilled _____ Depth _____ Aquifer _____

Water Level _____ Sample After Pumping _____ Mins. (Hrs.) Yield _____ GPM Temperature _____ °F

Point of Collection 3 Appearance _____ Clear _____ Turbid _____ Color _____

Use _____ Remarks _____ (Over)

Date Collected 3/21/86 Time 11:25 A By C. BoucherSend copy of completed analysis to Carol Boucher TDWR Office No. 1115

TDWR-0778 (Rev. 10-24-84)

No. **GW 03568**Point of Collection LSZ

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station

Austin, Texas

Work No. 9097Org. No. 444

Sample No. _____

Lab Used TDMLab No. EWG 1371Method of Preservation IceType of Facility SIDate Completed MAR 31 '86Analyst's Signature ML

	Mg/l	EPM		Mg/l	EPM	Other Ions	Mg/l
Calcium			Calcium				
Calcium	<u>40</u>	<u>2.03</u>	Bicarbonate	<u>722</u>	<u>11.84</u>	<input type="checkbox"/>	
Magnesium	<u>29</u>	<u>2.37</u>	Sulfate	<u>5</u>	<u>0.10</u>	<input type="checkbox"/>	
Sodium	<u>1015</u>	<u>44.13</u>	Chloride	<u>1288</u>	<u>36.31</u>	<input type="checkbox"/>	
Total	<u>48.53</u>		Fluoride			<input type="checkbox"/>	
<input type="checkbox"/> Potassium			Nitrate-N			<input type="checkbox"/>	
<input type="checkbox"/> Boron			pH		<u>49.09</u>	<input type="checkbox"/>	
<input type="checkbox"/> Iron			Total	<u>2762</u>		<input type="checkbox"/>	
Remarks			Dissolved Solids (sum)				
			Phenolphthalein Alkalinity as CaCO ₃				
			Total Alkalinity as CaCO ₃				
			Total Hardness as CaCO ₃				
			Specific Conductance (Micro-mhos/cm)				
			Dry Residue (Micro-mhos/cm)				

☐ Items will be analyzed if checked, total Iron requires separate sample.

TDWR-0770 (Rev. 10-24-84)

TDWR-0287

District C.O.

County Harris Beeline

Time Collected 11:25 A

Plant Name Lubrizol Corp

Point of Collection MW-LSZ

Method of Flow Measurement.

PERMIT NUMBER										PAGE NO.		CARD TYPE	DATE						MAT. STAMP	Chlorine Contact Time																																							
													Mo.		Day		Yr.			Date Shipped 3/21/86																																							
1										9 10 12		13	14 15		16 17		18 19		20	Collector's Signature <i>Chouch</i>																																							
21 CODE										26 PARAMETER VALUE										35 CODE										40 PARAMETER VALUE										49 CODE										54 PARAMETER VALUE 62									
Flow (gpd)										Water Temperature (°F)										pH																																							
0 0 0 5 6										0 0 0 1 1										0 0 4 0 0																																							
D.O. (mg/l)										Turbidity (JTU)																																																	
0 0 3 0 0										0 0 0 7 0																																																	

Lab Used

TDH

Lab. No. _____

No. HM 11857

District 60

EW6 1363

Type Sample: Heavy Metals

Material Sampled: Raw, Partially Treated, F

Method of Preservation 17 N 03

Grab Bailer

Composite _____ Hr.

Type Facility.

Observations

Auxiliary Tags

Date Completed

Analyst's Signature

21 CODE	26 PARAMETER VALUE	35 CODE	40 PARAMETER VALUE	49 CODE	54 PARAMETER VALUE
Arsenic	μg/l	Barium			
	23				
Cadmium		Chromium	μg/l	Copper	
			59		
Lead	μg/l	Manganese		Molybdenum	
	2100				
Nickel		Selenium		Silver	
Zinc					

No. **GW 03575**

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station

Austin, Texas 78711

Work No. 444Org. No. 444

Sample No. _____

Owner Lubrizol Corp

Address _____

Zip _____

County HarrisWell No. 17W-1 **CM**Location 30324

Date Drilled _____

Depth _____

Aquifer _____

Water Level _____

Sample After Pumping _____

Mins. (Hrs.) Yield _____

GPM _____

Temperature _____

°F

Point of Collection _____

Appearance _____

Clear _____

Turbid _____

Color _____

Use _____

Remarks _____

(Over)

Date Collected 3/21/86Time 12:02 PMBy BoucherSend copy of completed analysis to Carol BoucherTDWR Office No. 1115

TDWR-0778 (Rev. 10-24-84)

No. **GW 03575**Point of Collection LS3

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station

Work No. 9097Org. No. 444

Sample No. _____

Lab Used TDHLab FW 6-1369Method of Preservation IceType of Facility SIDate Completed MAR 31 1986Analyst's Signature ML

Mg/l

EPM

EPM

Other Ions

Mg/l

~~Other~~

Calcium

Magnesium

Sodium

Total

☐ Potassium☐ Boron☐ Iron

Remarks _____

~~Carbonate~~

Bicarbonate

Sulfate

Chloride

~~Fluoride~~~~Nitrate~~~~pH~~

Dissolved Solids (sum)

~~Phenolphthalein Alkalinity as CaCO₃~~~~Total Alkalinity as CaCO₃~~~~Total Hardness as CaCO₃~~~~Specific Conductance (Microhm/cm)~~~~Diluted Conductance (Microhm/cm)~~

Total

☐ Items will be analyzed if checked, total Iron requires separate sample.

TDWR-0778 (Rev. 10-24-84)

TDWR-0287

County Harris ~~Basin~~

~~Discharge Name~~

Time Collected AD 12:02 PM

Point of Collection 6 MW-LS-3 MW-1

Method of Flow Measurement

PERMIT NUMBER				PAGE NO.		CARD TYPE	DATE				MAT. STAMP	Chlorine-Contact-Time												
							Mo.	Day	Yr.	Date Shipped 3/21/86														
1				9	10	12	13	14	15	16	17	18	19	20	Collector's Signature <i>Borch</i>									
21 CODE				26 PARAMETER VALUE				35 CODE				40 PARAMETER VALUE				49 CODE				54 PARAMETER VALUE 62				
Flow (gpd)								Water Temperature (°F)								pH								
0 0 0 5 6								0 0 0 1 1								0 0 4 0 0								
D.O. (mg/l)								Turbidity (JTU)																
0 0 3 0 0								0 0 0 7 0																

Lab Used TDH

District C. O.

Lab Used 1 DA Lab.

EW 6-1365

Type Sample: Heavy Metals

Material Sampled: Raw, Partially Treated

Grab Bailer

Method of Preservation 17NO₂

Observations

Type Facility SI

~~194.~~

Auxiliary Tags 110 1 1 '96

Date Completed.

Analyst's Signature

21 CODE	26 PARAMETER VALUE	35 CODE	40 PARAMETER VALUE	49 CODE	54 PARAMETER VALUE 62
Arsenic	µg/l	Boron			
	< 25				
Cadmium		Chromium	µg/l	Copper	
			< 40		
Lead	µg/l	Manganese		Mercury	
	< 100				
Nickel		Selenium		Silver	
Zinc					

No. **GW** 03560

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station
Austin, Texas 78711Work No. 7071
Org. No. 444
Sample No. _____

Owner Lubrizol Corp Address _____ Zip _____
County Harris Well No. LS1
Location 30324
Date Drilled _____ Depth _____ Aquifer _____
Water Level _____ Sample After Pumping _____ Mins. (Hrs.) Yield _____ GPM Temperature _____ °F
Point of Collection _____ Appearance _____ Clear _____ Turbid _____ Color _____
Use _____ Remarks _____ (Over)
Date Collected 3/21/86 Time 12:26 P By C. Bouch
Send copy of completed analysis to Carol Boucher TDWR Office No. 1115

TDWR-0778 (Rev. 10-24-84)

No. **GW** 03560

TEXAS DEPARTMENT OF WATER RESOURCES

P.O. Box 13087, Capitol Station

Work No. 9097
Org. No. 444
Sample No. _____

Point of Collection LS1
Lab Used TDH Lab No. EW6-1370 Method of Preservation Ice
Type of Facility SI Date Completed MAR 31 '86 Analyst's Signature ML

	Mg/l	EPM		Mg/l	EPM	Other Ions	Mg/l
Calcium			Carbonate			<input type="checkbox"/>	
Calcium	<u>59</u>	<u>2.95</u>	Bicarbonate	<u>604</u>	<u>9.90</u>	<input type="checkbox"/>	
Magnesium	<u>30</u>	<u>2.45</u>	Sulfate	<u>140</u>	<u>2.92</u>	<input type="checkbox"/>	
Sodium	<u>315</u>	<u>13.70</u>	Chloride	<u>218</u>	<u>6.15</u>	<input type="checkbox"/>	
Total		<u>19.10</u>	Fluoride			<input type="checkbox"/>	
<input type="checkbox"/> Potassium			Nitrate-N			<input type="checkbox"/>	
<input type="checkbox"/> Boron			pH			<input type="checkbox"/>	
<input type="checkbox"/> Iron			Total	<u>1062</u>	<u>18.96</u>	<input type="checkbox"/>	
Remarks			Dissolved Solids (sum)				
			Phenolphthalein Alkalinity as CaCO ₃				
			Total Alkalinity as CaCO ₃				
			Total Hardness as CaCO ₃				
			Specific Conductance (Microhm/cm)				
			Dissolved Conductance (Microhm/cm)				

* Items will be analyzed if checked, total Iron requires separate sample.

TDWR-0778 (Rev. 10-24-84)

Attachment III

III. Pollutant Dispersal Pathways: (ground water, surface water, air)

Ground Water: The uppermost, usable aquifer in the site area is the Upper Chicot Aquifer located at a depth of approximately 400 feet. Discontinuous sand pockets or "lenses" are present in the uppermost strata at depths of 15 to 30 feet. These sands are typically sandy silts or very fine silty sands. Shallow ground water flow is generally north and west towards Patrick Bayou.

Surface Water: Into Patrick Bayou, thence into the Houston Ship Channel.

Air: The prevailing wind direction is from the southeast.

V. Target Populations of Concern: (human, environment)

Located within one mile of the plant are industrial, commercial, residential, and undeveloped areas. Land adjacent to plant boundaries is industrial. The nearest residential areas are approximately one-half mile from the plant. See land use map, Attachment IIIA.

VI. Documents Reviewed:

Notice of Registration (12/19/85), TWC Inspection (9/20/85), Permit Application Parts A & B, Part B Permit Application, Section VIII Addition (9/17/85), Part A revisions (7/3/85).

TDWR-0287

District C.O.

County Harris ~~Basin~~

~~Bischarge Name~~

Time Collected 12:26 P

Plant Name Lubrizol Corp 30324

Point of Collection MW-LS1

Method of Flow Measurement

PERMIT NUMBER				PAGE NO.		CARD TYPE	DATE			MAT. STAMP	Chlorine Contact Time													
							Mo.	Day	Yr.		Date Shipped													
1				9	10	12	13	14	15	16	17	18	19	20	3/21/86									
								0	3	2	1	8	6		Collector's Signature <i>C. Bouch</i>									
21 CODE				26 PARAMETER VALUE				35 CODE				40 PARAMETER VALUE				49 CODE				54 PARAMETER VALUE 62				
Flow (gpd)								Water Temperature (°F)								pH								
0 0 0 5 6								0 0 0 1 1								0 0 4 0 0								
D.O. (mg/l)								Turbidity (JTU)																
0 0 3 0 0								0 0 0 7 0																

Lab Used TDH

District C.O.

Lab Used

Lab. M

EW6 1354

Type Sample: Heavy Metals

Material Sampled: Raw, Partially Treated,

Grab Bailer

Method of Preservation

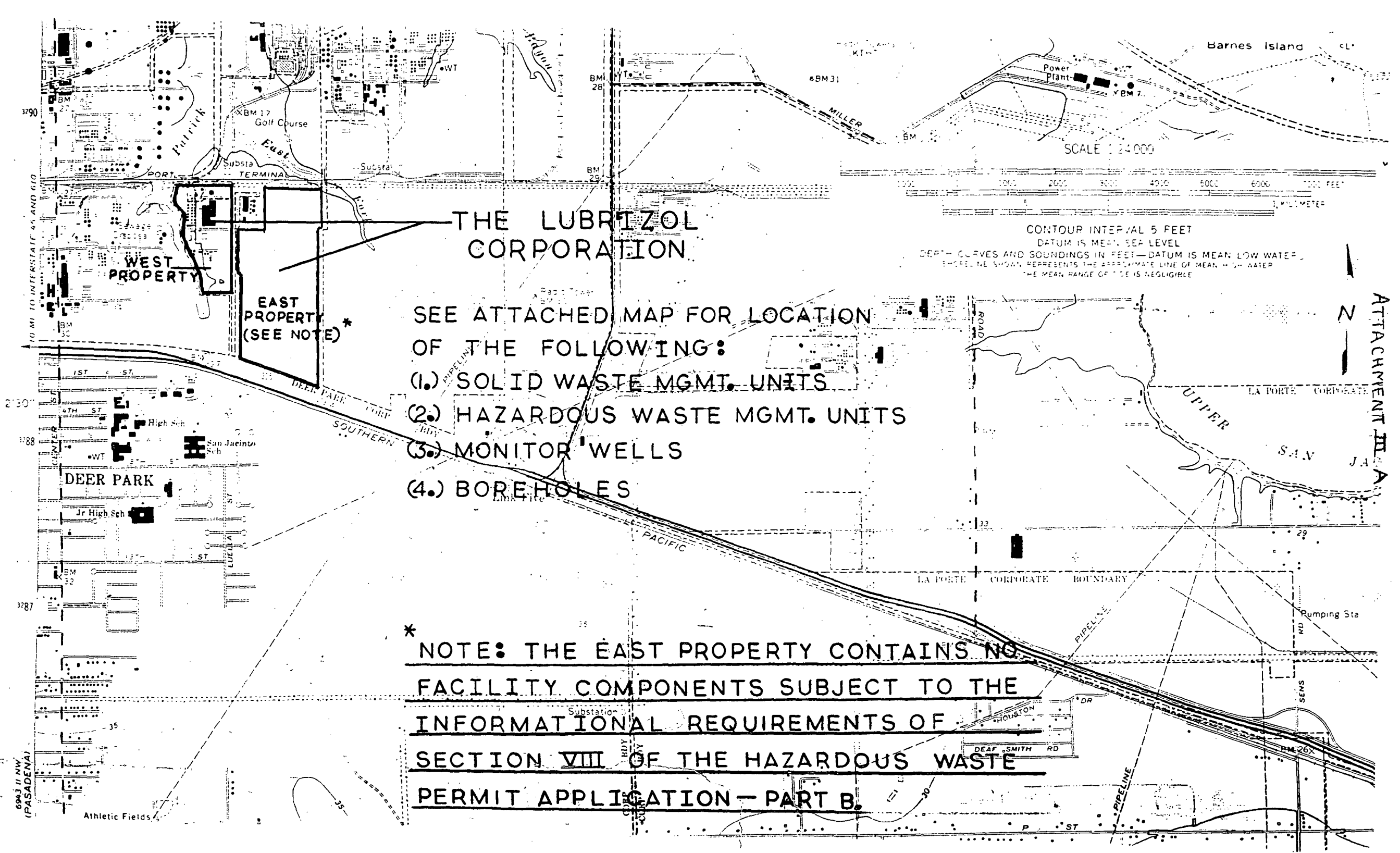
Observations

Auxiliary Tags

Date Completed

Analyst's Signature

21 CODE	26 PARAMETER VALUE	35 CODE	40 PARAMETER VALUE	49 CODE	54 PARAMETER VALUE 62
Arsenic	13/L	Barium			
	100				
Cadmium		Chromium	μg/L	Copper	
			61		
Lead	μg/L	Manganese		Mercury	
	< 100				
Nickel		Selenium		Silver	
Zinc					



THE LUBRIZOL CORPORATION

- SEE ATTACHED MAP FOR LOCATION OF THE FOLLOWING:
- (1.) SOLID WASTE MGMT. UNITS
 - (2.) HAZARDOUS WASTE MGMT. UNITS
 - (3.) MONITOR WELLS
 - (4.) BOREHOLES

* NOTE: THE EAST PROPERTY CONTAINS NO FACILITY COMPONENTS SUBJECT TO THE INFORMATIONAL REQUIREMENTS OF SECTION VIII OF THE HAZARDOUS WASTE PERMIT APPLICATION - PART B.

Attachment IV

FATE AND TOXICITY DATA

Appendix VIII Constituent Fate and Toxicity data follows as referenced:

<u>Constituent</u>	<u>Ref (1)</u>	<u>Ref (2)</u>
Barium & Compounds	72	
Butyl Alcohols	109	
Carbon Disulfide	134	I.13.46-1
Chromium & Compounds	176	I.4.6-1
Maleic Anhydride	415	
Methyl Alcohol (Methanol)	434	
Methyl Ethyl Ketone (M.E.K.)	451	
Phenol	531	I.8.1-1
Sodium Aluminate	41	
Sulfuric Acid	619	
Toluene	659	I.9.10-1
Xylenes	714	I.9.18-1

Ref. (1) - Handbook of Toxic and Hazardous Chemicals, Marshall Sittig, 1981.

Ref. (2) - EPA Treatability Manual, Vol. 1. USEPA-600/2-82-001a.

TX D041067638
TEXAS WATER COMMISSION File IIIA

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



Larry R. Soward, Executive Director
Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

August 26, 1986

Mr. Robert C. Copes
Environmental Control Manager
The Lubrizol Corporation
P.O. Box 158
Deer Park, Texas 77536

Re: Solid Waste Registration No. 30324
Review of No. 1 Lift Station Closure

Dear Mr. Copes:

We have concluded review of Lubrizol's amended closure plan for the No. 1 Lift Station (Facility Unit No. 1 on your Notice of Registration) submitted by your letter of June 6, 1986. Our review indicates that the plan along with the modifications stated herein, substantially conforms with the applicable requirements of 40 CFR Part 265 Subpart G and 40 CFR 265.197.

This letter constitutes Executive Director approval of the above-referenced closure plan with incorporation of the following modifications:

1. Post-closure ground-water monitoring will continue on a quarterly schedule. The parameters will include: pH, specific conductance, barium and total phenol. Barium shall be analyzed by utilizing an EPA approved method.
2. Prior to constructing on or in the vicinity of the subject waste management unit after final closure, plans which detail the steps to be taken to protect the integrity of the cap shall be submitted to TWC for review.

Mr. Robert G. Copes

Page 2

August 26, 1986

If you have any questions regarding the above, please contact Carol Boucher of the RCRA Ground Water Enforcement Unit at (512) 463-8425.

Sincerely,

A handwritten signature in black ink, appearing to read 'B. W. Dixon', is written over the typed name.

Bryan W. Dixon, P.E., Director
Hazardous and Solid Waste Division

CB:mh

cc: Dwight Russell, Permits
Wayne Harry, Permits
Russell Kimble, Reports and Management Group
TWC Southeast Region, Deer Park Office

FSL

File III A TXD041067438

Texas Water Commission

INTEROFFICE MEMORANDUM

TO : The Files

THRU : Reports and Management Group
Hazardous and Solid Waste Division

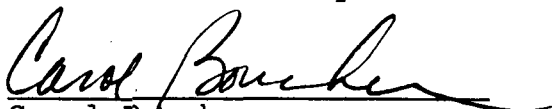
FROM : Groundwater Enforcement Unit
Hazardous and Solid Waste Division

SUBJECT: Lubrizol Corporation
Solid Waste Registration No. 30324

DATE: 6/27/86

Attached is an addendum report to the Comprehensive Monitoring Evaluation (CME) of March 21, 1986 which includes the results of analyses of monitor well samples taken during the inspection. These results were not available at the time of the CME report submittal. The attachment to this memo should be affixed to the original CME report.

1. In Regards to the No. 1 Station ground water monitoring program: the boring log and construction details for the new MW-1 were received on April 18, 1986. This information is now incorporated into the CME inspection Technical Reports. This additional information confirms the preliminary assessment that the ground water monitoring system in place at the No. 1 Lift Station is in compliance with the requirements of their Settlement Agreement and with the requirements of 31 TAC 336.112(5).
2. In regards to the co-sampling analytical results, see Attachment C-IV:
 - A. Equalization Basin - ground water contamination by various hazardous constituents is confirmed in MW-EQ-2. The sample obtained from the upgradient well MW-AE-2 contained many unidentified compounds in the range of 20-800 ppb.
 - B. No. 1 Lift Station - ground water contamination by hazardous constituents has been confirmed in MW-1 in trace to 3.6 ppb. There are several other compounds present in the ground water in the vicinity of the No. 1 Lift Station.


Carol Boucher
CB:mh

Attachment

cc: TWC Region IV, Deer Park Office

2. Site Hydrogeology - Lift Station

a. Attachment AL-I - Site diagram with locations of waste management area(s) [WMA], borings, wells, lines of cross-sections, etc.

b. Site stratigraphy to depth of investigation - 31 feet:

Unit	Thickness	Description
<u>1</u>	<u>6.5-9.5'</u>	<u>Fill, sand, silty sandy clay</u>
<u>2</u>	<u>6.5-14.5'</u>	<u>Silty to sandy clay, black to gray ^{beaver}</u>
<u>3</u>	<u>2-4'</u>	<u>Silty sand to sandy silty clay</u>
<u>4</u>	<u><4'</u>	<u>stiff red clay</u>

c. Attachment AL-II - Cross-Section(s)

d. Saturated zone(s) and Aquitard(s)

Unit	Depth	Saturated	Potentiometric	Confined/	K	Vertical
	Encou.	Thickness	Rise	Unconf.		Gradient
<u>3</u>	<u>16-22.5</u>	<u>2-4'</u>	<u>Unknown</u>	<u>Confined</u>	<u>Unknown</u>	

e. Is first water-bearing zone in hydraulic communication with deeper zone (Y/N)? unknown

f. Is aquitard continuous beneath site (Y/N)? unknown

g. If yes for e or f, calculate rate of downward vertical migration on

insufficient data
Attachment _____; Rate _____ Aquiclude Thickness _____
Migration Time _____.

h. Unit(s) monitored during interim status upper saturated sand

i. Unit(s) designated as uppermost aquifer in Pt. B not designated

Concur (Y/N)

2. Site Hydrogeology, comments: (No. 1 Lift Station)

The site is underlain by dredge spoil fill overlying silts, sands and clays of the Beaumont fm. Patrick's Bayou is west of the lift station and local ground water flow is west-southwest into the bayou.

3. Monitor Well Construction (*No. 1 Lift Station*)

- a. Attachment AL-III-Well construction diagrams.
- b. Attachment AL-IV-Table of well construction details.
- c. Do monitor well installation techniques and materials of construction satisfy 31 TAC 335.192(c)-(Y/N)?

d. Comments: _____

4. Site Ground Water Movement

- a. Attachment AL-V-Water table/Potentiometric Surface Map. (Indicate inferred flow directions directly on map. Include several maps to show the range of observed water level measurements).

b. Calculate minimum and maximum observed gradients in units of feet/foot. Show on map and list here .023 ft/ft, LS-1 to LS-2.

- c. Attachment AL-VI-Calculations of average linear velocity (v) for gradients reported above, showing all assumptions. List results

here: $v_{max} = 58.1 \text{ feet/year}$
 $v_{min} = 2.9 \text{ feet/year}$

d. Comments: _____

5. Monitor Well Placement (No. 1. Lift Station)

- a. Indicate distance(s) of upgradient/background well(s) from WMA

140 ft

- b. Are designated upgradient well(s) confirmed as upgradient (Y/N)?

[31 TAC 335.192(a)(1)]

- c. Are upgradient well placements adequate to yield samples

representative of background groundwater quality (Y/N)? [31 TAC

335.192(a)(1)(A)], unaffected by WMA (Y/N)? [31 TAC

335.192(a)(1)(B)]

- d. Indicate on the site diagram (Att. AL-I above) the lateral spacing,

in feet, of downgradient/perimeter monitor wells.

- e. Are designated downgradient wells confirmed as downgradient (Y/N)

- f. Describe the operator's justification for lateral spacing based

on minimum requirement set forth

in their Settlement Agreement of

Nov. 8, 1985.

- g. Is the lateral spacing sufficient to satisfy the performance

standard of 31 TAC 335.192(a)(2)? (Y/N). If no, explain in

comments.

- h. Indicate on map and tabulate below the distances of down gradient

wells from the edge of WMA along the direction of groundwater flow:

Well	LS-2	M10-1								
Distance	10'	10'								
Time	3.4	13.8								

Calculate groundwater travel time based on v calculated above.

Assuming conservative transport, will each well detect contaminants

during the active life or post-closure care period. Indicate those

wells that will not with (*).

1. Vertical placement- Indicate on cross-sections (Att AL-II, above) the screened and gravel-packed intervals of wells and tabulate:

Well	LS-1	LS-2	MW-1						
Screen									
length	5'	10'	5'						
Aquifer									
thickness	2'	2'	4'						
S/U	S	S	S						

S=Satisfactory U=Unsatisfactory

Explain in comments why vertical placement is unsatisfactory [31 TAC 335.192(c)].

Comments: The screen length in LS-2 appears excessive, however there is no well defined sand zone in LS-2. The transmissive zone appears to be a sandy clay (see Attachment AL-II)

6. Do the results of the QA/QC program verify the validity and reliability of the laboratory and field-generated data?

Yes X No

If not, describe possible problems: _____

7. Review the operator's records of analytical results for:

- a. Parameters of initial year of sampling which exceed IPDWS;
- b. Parameters sampled as part of a Ground Water Quality Assessment Plan.

Indicate on Attachment _____ any parameters exceeding IPDWS, or for which reported detection limits increase through time or appear high relative to other wells.

8. Overall, does the analysis program enable the reliable detection of, and for assessment purposes, the quantification of a release of hazardous constituents to ground water from the monitored WMA? Yes X No

Comments: Lubrizol did not undergo an initial year of background.

9. Results of co-sampling events.

Attachment C-III - Results of Operator sample analyses. ★

Attachment C-IV - Results of TWC sample analyses.

- a. Describe any apparent discrepancies between data sets:

Operator sample analyses results have not been made available to TWC at the time.

b. Compare data sets to historical results - note here any parameters which do not occur within previously observed ranges: _____

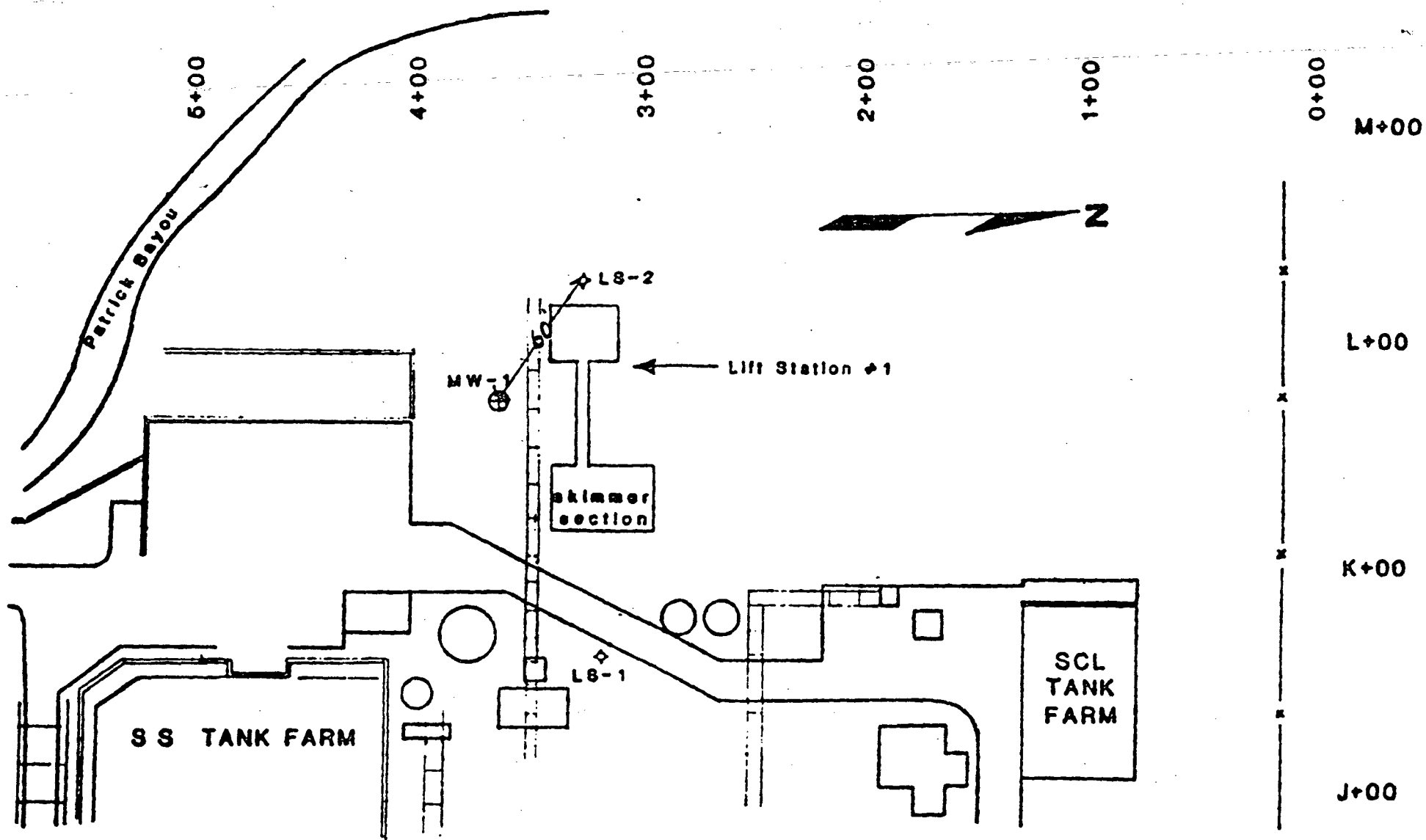
c. Do TWC results confirm the operator's results?

Yes ____ No ____

If not, describe possible sources of error: _____

10. Describe the ground water quality, based on TWC results, utilizing Stiff diagrams, tri-linear plots, etc. Is ground water contamination confirmed? Yes ☒ No ____

Comments: _____



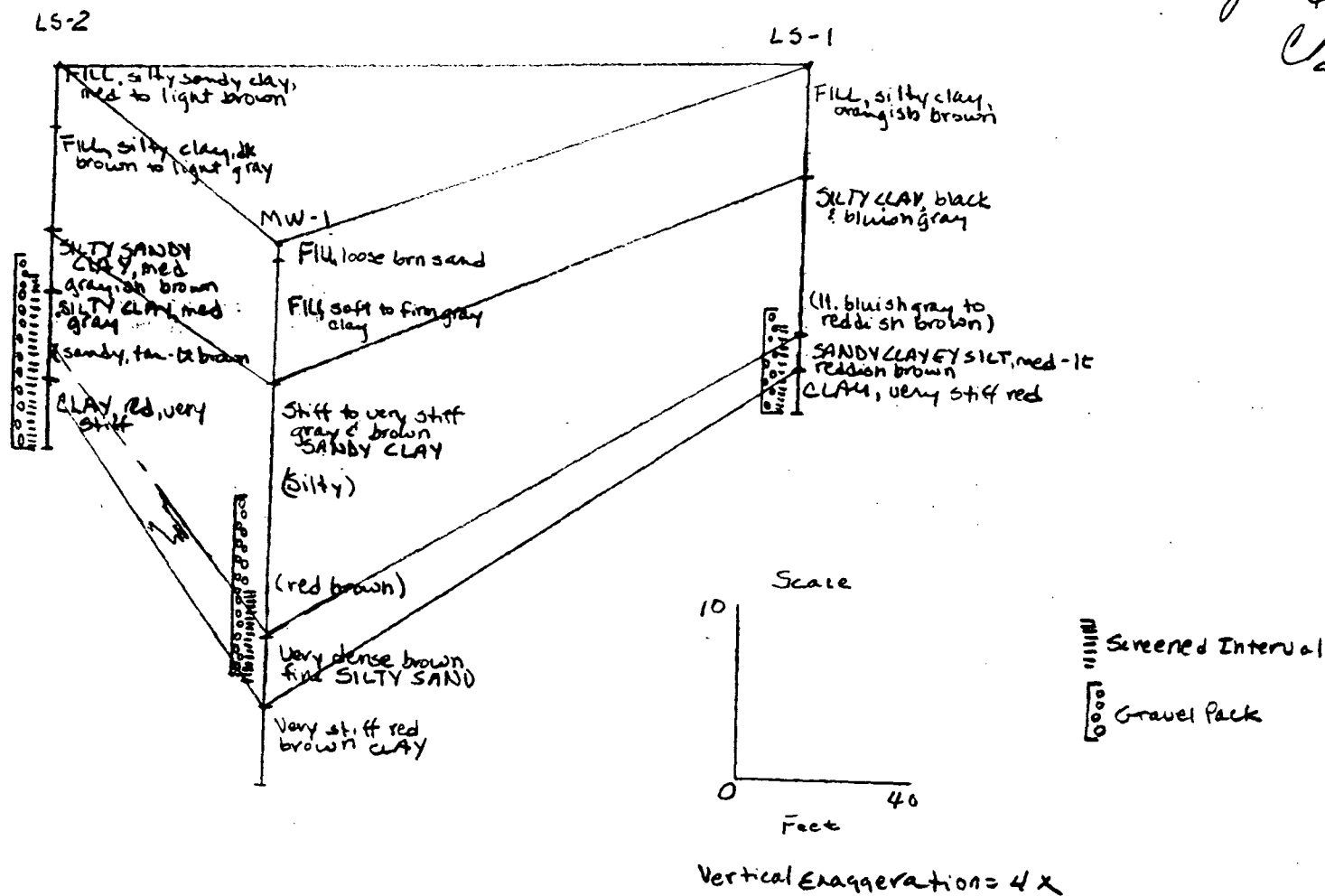
ATTACHMENT AL-I Site Diagram

LEGEND
 MW-1 ⊕ EXISTING MONITORING
 LS-1 ◇ PROPOSED MONITORING
 WELLS
 GRID INDICATED BY GRID

 LAW ENGINEERING TESTING COMPANY
 HOUSTON, TEXAS
 THE LUBRIZOL CORPORATION
 DEER PARK, TEXAS

PROJECT
 FIGURE 1
 SITE PLAN
 LAW JOB No. HT-1568-85H

"Original"
CB



ATTACHMENT AL-II
Fence Diagram

ATTACHMENT *AL-III*

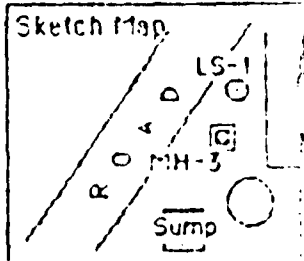
Well Construction Diagrams



ERM-SOUTHWEST, INC.

Project LIFT STATION GYAOwner LUBRIZOL CORPORATIONLocation DEER PARK, TEXASW O Number 03-19Well Number LS-1Total Depth 20' Diameter 6"Surface Elevation 23.48'Water level Initial -4' 24 Hrs 3.74'Screen Dia. 3"Length 5' Slot Size 0.01"Casing Dia. 3"Length 17.56' Type SCH 40 PVCDrilling Company YOUNGER DRILLINGDrilling Method HOLLOW STEM AUGERDriller -----Log By S. CALHOUN3/17/86
Date Drilled 3/18/86

Drilling Log



Notes

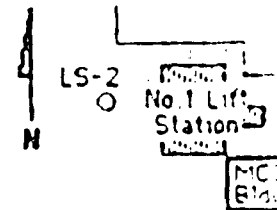
T.O.C. EL. 26.04

DEPTH (feet)	GRAPHIC LOG	Well Construction	Sample Type	Cohesive Strength (tons/sq. ft.)	Sample Interval (Ft.)	Description Interval (Ft.)	Description/Soil Classification (Color, Texture, Structures)
0					0-3-2'	0-0.3'	CRUSHED ROCK
2.5					2-4'	0.3-6.5'	SILTY CLAY FILL Light orangish brown with tan and light gray mottling, occasional small gravel and fine sand laminations and pockets, soft and damp, no odor
5					4-6'		4-6' More silty and softer with less gravel, wood fragments, saturated zones, no odor
7.5					6-8'	6.5-15.5'	6-6.5' Dark gray to black SILTY CLAY Black and bluish gray mottled, plastic, damp, no odor
10					8-10'		8-12' Becoming more light bluish gray with depth, stiffer and possibly less silty, small infrequent calcareous nodules, not saturated, no odor
12.5					13-15'		12-15' Grades to light bluish gray and reddish brown mottled.
15						15.5-17.5'	SANDY CLAYEY SILT Medium to light reddish brown, very fine sand, saturated, no odor
17.5						17.5-20'	CLAY Red with occasional bluish gray mottling, no silt, very stiff, fractured, infrequent lighter lithified zones.
20					18-20'		

Drilling Log

Project LIFT STATION GYA Owner LUBRIZOL CORPORATION
 Location DEER PARK, TEXAS W O Number 03-19
 Well Number LS-2 Total Depth 22' Diameter 6"
 Surface Elevation 22.18' Water level Initial 8' 24 Hrs 6.29'
 Screen Dia. 3" Length 10' Slot Size 0.01"
 Casing Dia. 3" Length 13.81' Type SCH 40 PVC
 Drilling Company YOUNGER DRILLING Drilling Method HOLLOW STEM AUGER
 Driller ----- Log By S. CALHOUN Date Drilled 3/17/86
3/18/86

Sketch Map



Notes

T.O.C. EL. 24.99'

DEPTH (Feet)	GRAPHIC LOG	Well Construction	Sample Type	Cohesive Strength (tons/sq. ft.)	Sample Interval (Ft.)	Description Interval (Ft.)	Description/Soil Classification (Color, Texture, Structures)
0					0-2'	0-3.5'	SILTY SANDY CLAY FILL Medium to light brown with occasional light gray and black mottling, abundant shell fragments, soft, plastic, damp, slight odor, infrequent light brown sand seams and tan to light gray clay pockets.
2.5					2-4'		
5					4-6'	3.5-4'	FINE TO VERY FINE SAND FILL Tan with greenish gray mottling, slightly silty, infrequent black stained pockets.
7.5					6-8'	4-9.5'	SILTY CLAY FILL Dark brown to light gray mottled, slightly sandy, occasional small gravel, shell fragments, and plant debris. Infrequent black staining with slight odor.
10					8-10'		7-9.5' Similar to above with highly variable silt content, organic debris, sand pockets and seams, white silty pockets and fragments, very moist to saturated.
12.5					10-11'	9.5-13'	VERY SILTY VERY FINE SANDY CLAY Medium grayish brown, abundant rootlets, damp, crumbly, darker and more silty with depth.
15					13-15'	13-18'	SILTY CLAY Medium gray, abundant small white calcareous nodules, soft, plastic, damp, occasional small iron nodules.
17.5					15-17'		15-18' Becomes tan to light brown and gray mottled, slightly sandy with abundant rootlets and rare yellowish tan clay pockets.
20					18-20'	18-21.5'	CLAY Red and bluish gray mottled with calcareous nodules, frequent blocky irregular fragments, pockets and thin seams of dark brown to brownish gray silty clay to clayey silt, very soft, moist, rootlets.
					20-22'	21.5-22'	CLAY Red with greenish gray mottling, fractured, slickensides, very stiff, rootlets.

TEST BORING RECORD

ELEV.	DEPTH FEET	DESCRIPTION	s	dd	pf	mc	CONVERSION - 100 net PENETRATION BLOWS PER FOOT									
							0	5	10	15	20	30	40	60	80	100
23.0		FILL: Loose Brown Fine SAND in top one foot. Soft to Firm Gray CLAY with occasional shell fragments, occasional slag-like gravel, occasional silt pockets (1"). Trace of oil with slight odor.	X													
18.0			X													
	3.0		X													
13.0		Stiff to Very Stiff mottled Gray and Brown Sandy CLAY (CL) with occasional to abundant calcareous nodules.	X													
		- Silty below 11 feet, with occasional fine root holes														
8.0		- Red-Brown below 19 feet, with slickensides (CH).	X													
			X													
3.0			X													
	12.0		X													
-1.0		Very Dense Brown Silty Fine SAND (SI)	X													
	15.0		X													
-5.0		Very Stiff Red-Brown CLAY (CH) with Gray Mottling, occasional slickensides.	X													
	17.0		X													
-11.0		Boring terminated at 31.0 feet.														
		Boring reamed to 7-7/8 inches 0 to 25 feet. Four inch schedule 40 P.C. with Five foot 0.007" slot screen installed, sanded 14.6-24.6, bentonite 13.6 - 14.6, grout to surface. Labelled TW-1														

REMARKS:

Elevation top of 4" Casing
25.7 feet

DRILLED BY A.S.
LOGGED BY R.C.
CHECKED BY V.J.S.

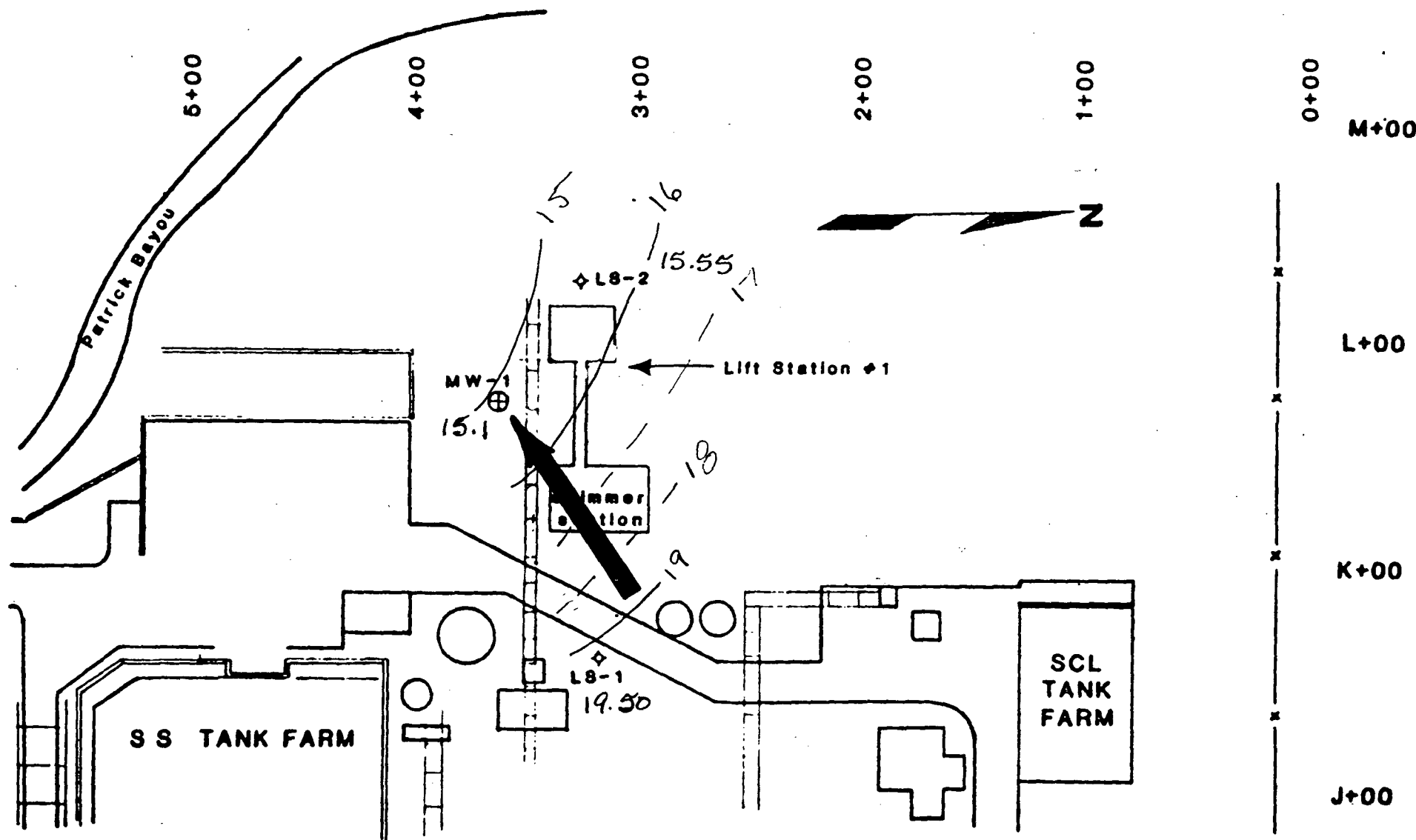
BORING NUMBER 7-1 TW-1
DATE STARTED 10-10-0
DATE COMPLETED 10-10-0
JOB NUMBER HT-054-906

LAW ENGINEERING
HOUSTON, TEXAS

Attachment AL-III Table of Well Construction Details

Well Number	LS-1	LS-2	MW-1					
Hole diameter	6"	6"	7 7/8"					
Total depth	20'	22'	31'					
Drill method	dry auger	dry auger	wet rotary					
Date drilled	3/17- 3/18/86	3/17- 3/18/86	10/22/80					
Casing I.D.	3"	3"	4"					
Casing type	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC					
How joined	threaded	threaded	-					
Stick-up length	2.56'	2.81'	2.38'					
T.O.C.-MSL	26.04	24.99	25.7					
Ground level-MSL	23.48	22.18						
Capped/Lockable	Both	Both	Both					
Surface pad size	unk	unk	unk					
Depth of surface seal, feet below ground level	11'	8'	13.6' ^{CB}					
Annulus Fill	bentonite grout	grout	grout					
Depth-annulus seal, feet below ground level	11'	8'	13.6					
Depth-gravel pack, feet below ground level	13'	11'	14.6					
Length-gravel pack	7'	11'	10'					
Size-gravel pack	unk	unk	unk					
Depth to screen, feet below ground level	15'	12'	20'					
Screen I.D./slot	3"/0.01"	3"/0.01"	4"/0.008"					
Screen type	Sch 40 PVC	Sch 40 PVC	Sch 40 PVC					
Screen length	5'	10'	15'					
Blank length	0	0	0					
Development Method	airlift	airlift	unk					

Comments: Monitor well #1 installation details sub-
mitted on April 18, 1986



3/21/86
 ATTACHMENT AL-V Potentiometric Surface Map

LEGEND
 MW-1 ⊕ EXISTING MONITORING
 LS-1 ◇ PROPOSED MONITORING
 WELLS
 GRID INDICATED BY GRID



LAW ENGINEERING TESTING COMPANY
 HOUSTON TEXAS
 The LUBRIZOL CORPORATION
 DEER PARK, TEXAS

PROJECT
 FIGURE 1
 SITE PLAN

LAW JOB No. HT-1669-85H

$$V = \frac{Ki}{\theta}$$

K = hydraulic conductivity

i = gradient

θ = porosity

$$V_{max} = \frac{(K_{max}) i}{\theta}$$

$$= \frac{(8.5 \times 10^{-4} \text{ cm/sec}) (.023 \text{ ft/ft})}{.35}$$

$$= 55.8 \times 10^{-6} \text{ cm/sec}$$

$$= 58.1 \text{ feet/year}$$

$$V_{min} = \frac{(K_{min}) i}{\theta}$$

$$= \frac{(4.3 \times 10^{-5} \text{ cm/sec}) (.023 \text{ ft/ft})}{.35}$$

$$= 2.82 \times 10^{-6} \text{ cm/sec}$$

$$= 2.9 \text{ feet/year}$$

¹ from "Ground Water Compliance Plan Application and Technical Report" submitted

² by Lubrizol Corp on Feb. 5, 1986

Calculated (measured)

³ from Freeze and Cherry, 1979

TEXAS WATER COMMISSION

District No. Central Office

ATTACHMENT AL-VI

Horizontal Ground Water Flow Velocity
Calculations

Well No.	Owner	Depth of well (ft)	Date of collection	mg/l Calcium (Ca)	mg/l Magnesium (Mg)	mg/l Sodium (Na)	mg/l Potassium (K)	mg/l Bicarbonate (HCO ₃)	mg/l Sulfate (SO ₄)	mg/l Chloride (Cl)	Fluoride (F)	Nitrate (NO ₃)	Dissolved solids (sum)	Total hardness as CaCO ₃	Spec. Cond. (microhm/cm at 25°C) Field	pH	µg/l As	µg/l Cr	µg/l Pb	Tot
LS2	Lubrizol		3/21/86	40	29	1015		722	5	1288			2762		4500	7.28	23	59	<100	27
MW1			3/21/86	80	45	232		614	34	245			940		1750	7.03	<25	<40	<100	6
LS1			3/21/86	59	30	315		604	140	218			1062		1900	7.02	100	61	<100	20
EQ2			3/21/86	1120	402	5790		603	6	11816			19482		40000	6.29	140	<40	<100	260
AE2			3/21/86	312	189	1103		354	77	2565			4423		8100	7.09	<25	<40	<100	14

ATTACHMENT C-IV.

Texas Water Commission Ground Water Analysis Results

Texas Department of Health
GC/MS Analysis Report
EPA Priority Pollutants

Equalization Basin:

MW-AE-2: Acid Extractables (ppb) - none detected
Base Neutral Extractables (ppb) - none detected
Pesticides (ppb) - none detected
Volatile Organics (ppb) - none detected
Tentative Compound Identification - sample contained many
unidentified compounds
in the range 20-800 ppb

MW-EQ-2: Acid Extractables (ppb) - phenol 5400
chlorophenol trace
2,4 dimethylphenol 37

Base Neutral Extractables (ppb) -
naphthalene 580
acenaphthene 45

Pesticides (ppb) - none detected

Volatile Organics (ppb) - methylene chloride* 180
toluene 140
ethylbenzene 85

Tentative Compound Identification (ppb) -
dimethylpentanol 850
2-methylhexanol 520
4-(1,1-dimethylethyl)-phenol 1700
4-methyl-3H-1,2-dithiole-3-thione 1000
xylenes 410
MIBK 11000
T-butyl alcohol 34000
p-cresol 150
2-methyl naphthalene 75
sample contained the same unidentified compounds
as found in SW 9437 (MW-LS-1), at approx 1 ppm

No. 1 Lift Station:

MW-LS-1: Acid Extractables (ppb) - none detected
Base Neutral Extractables (ppb) - none detected
Volatile Organics (ppb) - none detected

Tentative Compound Identification (ppb) -
3,3'-thiobis[2-methyl-1-propene] 3200
(dimethylethyl)phenol 140
T-butyl alcohol 1200

sample contained
several uniden-
tified compounds
in the 1ppm range
Pesticides (ppb) - none
detected

TEXAS WATER COMMISSION
District No. Central Office

ATTACHMENT C-IV (cont'd)
Ground Water Analysis Results

*methylene chloride value may be due
to lab contamination

(No. 1 Lift Station)

MW-LS-2: Acid Extractables (ppb) - none detected
Base Neutral Extractables (ppb) - none detected
Pesticides (ppb) - none detected
Volatile Organics (ppb) - none detected
Tentative Compound Identification (ppb) -
 4-methyl-2-pentanol 750
 C₂-benzene trace
 4²-(1,1-dimethylethyl)-phenol 87
 octylphenol 57
 sample contained several unidentified compounds in
 the 1 ppm range

MW-1: Acid Extractables (ppb) - none detected
Base Neutral Extractables (ppb) - none detected
Pesticides (ppb) - none detected
Volatile Organics (ppb) -
 trans-1,2-dichloroethylene trace
 trichloroethylene 3.6
Tentative Compound Identification (ppb) -
 sample contained low ppb amounts of same unidentified
 compounds found in SW9437 (MW-LS-1)

TEXAS WATER COMMISSION
District No. Central Office

ATTACHMENT C-IV (cont'd)
Ground Water Analysis Results

APPROXIMATE CONCENTRA
AS D-10 ANTHRACEN
() MICROGRAMS/LITE
() MILLIGRAMS/XILO

EPA PRIORITY POLLUTANTS

C. 1451314
E. HOGBERG

DATE: 4/23/86

TDH SAMPLE NUMBER: ZHE-776
TWC SAMPLE NUMBER: SW 09434

DETECTION LIMITS ARE APPROXIMATE

SAMPLE TYPE: WELL

SAMPLE CONDITION: URBAN

ACID EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
PHENOL	<40	4-CHLORO-3-CRESOL	<40	4-NITROPHENOL	<40
CHLOROPHENOL	↓	2,4,6-TRICHLOROPHENOL	↓	2,6-DINITRO-2-CRESOL	↓
2-NITROPHENOL	↓	2,4-DIMETHYLPHENOL	↓	PENTACHLOROPHENOL	↓
2,4-DICHLOROPHENOL	<40	2,4-DINITROPHENOL	<40		

BASE NEUTRAL EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
N-NITROSO-N-DIMETHYLAMINE	<20	ACENAPHTHYLENE	<20	FLUORANTHENE	<20
bis-(2-CHLOROETHYL) ETHER	↓	DIMETHYL PHTHALATE	↓	PYRENE	↓
1,3-DICHLOROBENZENE	↓	2,6-DINITROTOLUENE	↓	BENZIDINE	↓
1,4-DICHLOROBENZENE	↓	ACENAPHTHENE	↓	DUTYL BENZYL PHTHALATE	↓
1,2-DICHLOROBENZENE	↓	2,4-DINITROTOLUENE	↓	BENZ(a)ANTHRACENE	↓
bis-(2-CHLOROISOPROPYL) ETHER	↓	FLUORENE	↓	CHRYSENE	↓
HEXACHLOROETHANE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	3,3'-DICHLOROBENZIDINE	↓
N-NITROSO-DI-n-PROPYLAMINE	↓	DIETHYL PHTHALATE	↓	bis-(2-ETHYLHEXYL)PHTHALATE	↓
NITROBENZENE	↓	DIPHENYLAMINE	↓	DI-n-OCTYL PHTHALATE	↓
ISOPHORBONE	↓	N-NITROSOBIPHENYLAMINE	↓	BENZO(j)FLUORANTHENE	↓
bis-(2-CHLOROETHOXY)METHANE	↓	1,2-DIPHENYLHYDRAZINE	↓	BENZO(h)FLUORANTHENE	↓
1,2,4-TRICHLOROBENZENE	↓	4-BROMOPHENYL PHENYL ETHER	↓	BENZO(a)PYRENE	↓
NAPHTHALENE	↓	HEXACHLOROBENZENE	↓	INDENO(1,2,3-cd)PYRENE	↓
HEXACHLOROBUTADIENE	↓	PHENANTHRENE	↓	DIBENZO(a,h)ANTHRACENE	↓
HEXACHLOROCYCLOPENTADIENE	↓	ANTHRACENE	↓	BENZO(ghi)PERYLENE	↓
2-CHLORONAPHTHALENE	<40	DI-n-BUTYL PHTHALATE	<40		

PESTICIDES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
alpha-BHC	<40	ALDRIN	<40	BETA-ENDOSULFAN	<40
gamma-BHC	↓	4,4'-DDE	↓	ENDOSULFAN SULFATE	↓
BETA-BHC	↓	DELDRIN	↓	ENDRIN	↓
delta-BHC	↓	4,4'-DDD	↓	alpha-ENDOSULFAN	↓
HEPTACHLOR	↓	4,4'-DDT	↓	HEPTACHLOR EPOXIDE	↓
ENDRIN ALDENYDE	<40				

VOLATILE ORGANICS IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
CHLOROMETHANE	<10	1,2-DICHLOROETHANE	<10	1,1,2-TRICHLOROETHANE	<10
BROMOMETHANE	↓	CARBON TETRACHLORIDE	↓	2-CHLOROETHYL VINYL ETHER	↓
VINYL CHLORIDE	↓	BROMODICHLOROMETHANE	↓	TRICHLOROETHYLENE	↓
CHLOROETHANE	↓	BENZENE	↓	BROMOFORM	↓
TRICHLOROFLUOROMETHANE	↓	DIBROMOCHLOROMETHANE	↓	TOLUENE	↓
CHLOROFORM	↓	1,1,1-TRICHLOROETHANE	↓	ETHYL BENZENE	↓
METHYLENE CHLORIDE	↓	1,2-DICHLOROPROPANE	↓	1,1,2,2-TETRACHLOROETHANE	↓
1,1-DICHLOROETHYLENE	↓	trans-1,3-DICHLOROPROPYLENE	↓	TETRACHLOROETHYLENE	↓
1,1-DICHLOROETHANE	↓	cis-1,3-DICHLOROPROPYLENE	↓	CHLOROBENZENE	↓
trans-1,2-DICHLOROETHYLENE	<40				

TENTATIVE IDENTIFICATION OF THE TEN LARGEST NON-PRIORITY POLLUTANT PEAKS BY COMPARISON WITH EPA/NIH MASS SPECTRAL LIBRARY. QUANTITATION AS DIB-ANTHRACENE IS PROVIDED, AND THE VALUES SHOULD BE REGARDED AS APPROXIMATE.

TENTATIVE
COMPOUND
IDENTIFICATIONAPPROXIMATE CONCENTRATION
AS D-10 ANTHRACENE
() MICROGRAMS/LITER
() MILLIGRAMS/KILOGRAM

see below

COMMENTS AND OTHER REQUESTED ANALYSES:

SAMPLE CONTAINED MANY UNIDENTIFIED COMPOUNDS
IN THE RANGE 20 - 800 PPD.

SIGNATURE

DATE

Richard A. Allert

4/27/86

NO. SW Lubrizo 1 Corp
 Site Name Lubrizo 1 Corp
 Site Location _____
 County Harris
 Method of Collection Bailer
 Type of Site: ☐ Drum ☐ Tank ☒ Impoundment ☐ Landfill
☐ Waste Pile ☐ Long-term ☐ Other _____
 Time Collected 2:47 (am/pm) Date Shipped 3/21/86
 Ass. Code HM11854 AT 23272
HE 3291, SW 63524
 CDOR: ☐ Yes ☐ No; Describe _____

S.W. Registration				Permit Number				Page No.				Date			
1	9	10		11	12	21	22	23	24	25	26	27	28	29	
<u>30324</u>								<u>032186</u>							

30	Code	35	Parameter Value	44	Code	49	Parameter Value	58	Code	63	Parameter Value	71
	<u>Temperature</u>		<u>8th 24°C</u>		<u>pH</u>		<u>6.29</u>		<u>Spec. Cond.</u>		<u>40000</u>	

C. Bouch
 (Collector's Signature)

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0249
 NO. SW 09435
 District C-2 Org. No. 444 Work No. 9097 Lab TDH
 Material Sampled: ☐ Solid waste (W); ☐ Liquid waste (L); ☐ Soil (E); ☒ Well (M);
☐ Stream (S); ☐ Other (O) _____
 Comments 2-202
 (continued on back)

MAR 24 '86	
Lab Only	Use rec'd
	<u>EH6 0775</u>
Analyst sign: <u>AMM</u>	
Preservation: <input type="checkbox"/> None; <input checked="" type="checkbox"/> Ice; <input type="checkbox"/> H ₂ SO ₄ ; <input type="checkbox"/> HNO ₃	
Auxiliary Tags <u>HM11854; AT 23272</u>	
<input type="checkbox"/> LEACHATE: EP Toxicity Series: TDWR	

30	Code	35	Parameter Value	44	Code	49	Parameter Value	58	Code	63	Parameter Value	71
<u>00403</u> <u>00340</u> <u>TOC</u> <u>00680</u> <u>260</u> <u>GC/MS</u> <u>VDA</u>												

N-PRIORITY POLLUTANT DEARS
 RY. QUANTITATION AS DIO-ANTHRACENE
 AS APPROXIMATE.

APPROXIMATE CONCENTRATION
 AS D-10 ANTHRACENE
 MICROGRAMS/LITER
 MILLIGRAMS/KILOGRAM

- STANDARD) 200
2000
850
500
1700
1000

DATE: 4/22/86

TECH SAMPLE NUMBER EHC 775
TWO SAMPLE NUMBER SW 4435QUANTITATION AS DIO-ANTHRAcene
IS PROVIDED AND THE VALUES SHOULD BE REPORTED AS APPROXIMATE.

LIMITS ARE APPROXIMATE

SAMPLE TYPE: LIQUID WASTE/WATER

SAMPLE CONDITION: IN CONT

TENTATIVE
COMPOUND
IDENTIFICATIONAPPROXIMATE CONCENTRATIONS
AS DIO-ANTHRAcene
MICROGRAMS/LITER
MILLIGRAMS/KILOGRAM

ACID EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	ANT	NAME	ANT	NAME	ANT
PHENOL	5400	4-CHLORO-3-CRESOL	<500	4-NITROPHENOL	<500
CHLOROPHENOL	4500	2,4,6-TRICHLOROPHENOL	↓	2,6-DINITRO-2-CRESOL	↓
2-NITROPHENOL	<400	2,4-DIMETHYLPHENOL	37	PENTACHLOROPHENOL	↓
2,4-DICHLOROPHENOL	↓	2,4-DINITROPHENOL	<400		

BASE NEUTRAL EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	ANT	NAME	ANT	NAME	ANT
N-NITROSO-N-DIMETHYLAMINE	<300	ACENAPHTHYLENE	<300	FLUORANTHENE	<300
bis-(2-CHLOROETHYL) ETHER	↓	DIMETHYL PHTHALATE	↓	PYRENE	↓
1,3-DICHLOROBENZENE	↓	2,6-DINITROTOLUENE	↓	BENZIDINE	↓
1,4-DICHLOROBENZENE	↓	ACENAPHTHENE	45	DUTYL BENZYL PHTHALATE	↓
1,2-DICHLOROBENZENE	↓	2,4-DINITROTOLUENE	<300	BENZ(a)ANTHRACENE	↓
bis-(2-CHLOROISOPROPYL) ETHER	↓	FLUORENE	↓	CHRYSENE	↓
HEXACHLOROETHANE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	3,3'-DICHLOROBENZIDINE	↓
N-NITROSO-DI-N-PROPYLAMINE	↓	DIETHYL PHTHALATE	↓	bis-(2-ETHYLHEXYL)PHTHALATE	↓
NITROBENZENE	↓	DIPHENYLAMINE	↓	DI-N-OCTYL PHTHALATE	↓
ISOPHORENE	↓	N-NITROSO(1-PHENYLAMINE	↓	BENZO(g)FLUORANTHENE	↓
bis-(2-CHLOROETHOXY)METHANE	↓	1,2-DIPHENYLHYDRAZINE	↓	BENZO(k)FLUORANTHENE	↓
1,2,4-TRICHLOROBENZENE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	BENZO(a)PYRENE	↓
NAPHTHALENE	550	HEXACHLORO BENZENE	↓	INDENO(1,2,3-cd)PYRENE	↓
HEXACHLOROBUTADIENE	<300	PHENANTHRENE	↓	DICENZO(a,h)ANTHRACENE	↓
HEXACHLOROCYCLOPENTADIENE	↓	ANTHRACENE	↓	BENZO(ghi)PERYLENE	↓
2-CHLORONAPHTHALENE	↓	DI-N-BUTYL PHTHALATE	↓		

PESTICIDES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	ANT	NAME	ANT	NAME	ANT
alpha-BHC	<400	ALDRIN	<400	Beta-ENDOSULFAN	<500
gamma-BHC	↓	4,4'-DDE	↓	ENDOSULFAN SULFATE	↓
delta-BHC	↓	DELDRIN	↓	ENDRIN	↓
delta-BHC	↓	4,4'-DDD	↓	alpha-ENDOSULFAN	↓
HEPTACHLOR	↓	4,4'-DDT	↓	HEPTACHLOR EPOXIDE	↓
ENDRIN ALDEHYDE	↓				

VOLATILE ORGANICS IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	ANT	NAME	ANT	NAME	ANT
CHLOROMETHANE	<100	1,2-DICHLOROETHANE	<100	1,1,2-TRICHLOROETHANE	<100
BROMOMETHANE	↓	CARBON TETRACHLORIDE	↓	2-CHLOROETHYL VINYL ETHER	↓
VINYL CHLORIDE	↓	PROMOCHLOROMETHANE	↓	TRICHLOROETHYLENE	↓
CHLOROETHANE	↓	BENZENE	↓	BROMOFORM	↓
TRICHLOROFLUOROMETHANE	↓	DIBROMOCHLOROMETHANE	↓	TOLUENE	140
CHLOROFORM	↓	1,1,1-TRICHLOROETHANE	↓	ETHYL BENZENE	85
METHYLENE CHLORIDE	180	1,2-DICHLOROPROPANE	↓	1,1,2,2-TETRACHLOROETHANE	<100
1,1-DICHLOROETHYLENE	<100	trans-1,3-DICHLOROPROPYLENE	↓	TETRACHLOROETHYLENE	↓
1,1-DICHLOROETHANE	↓	cis-1,3-DICHLOROPROPYLENE	↓	CHLOROBENZENE	↓
trans-1,2-DICHLOROETHYLENE	↓				

PENTANE (AS PCA INTERNAL STANDARD) 200

1-BUTENE ISOMER 2000

diethyl pentanol 850

2-methyl hexanol 500

4-(1,1-dimethylethyl)-phenol 1700

1-methyl-3,4,1,2-lithide-3-thione 1000

COMMENTS AND OTHER REQUESTED ANALYSES:

METHYLENE CHLORIDE VALUE MAY BE DUE TO
LAB CONTAMINATION

ALSO QUANTITATED IN µg/L

XYLENES - 410

MIBK - 11000

T-BUTYL ALCOHOL - 34000

p-cresol - 150

2-methyl naphthalene - 75

SAMPLE CONTAINED UNIDENTIFIED COMPOUNDS AS
THE SAME

FOUND IN SW 4437, AT APPROX 1 PPM.

SIGNATURE

DATE

Richard Willard 4/27/86

TEXAS DEPARTMENT OF WATER RESOURCES

NO. SW 09438

Site Name Lubrizol Corp

Site Location

County Harris

Method of Collection Bailer

Revised Section 452

Type of Site: ☐ Drain, ☐ Tank, ☒ Impoundment, ☐ Landfill
☐ Wash pile, ☐ Landfarm, ☐ Other

Time Collected 11:25 am Date Shipped 3/21/86

Acc. Code: HM 11857, HT 33275,
 HT 23282, GW 03568

ODOR: ☐ Yes; ☐ No; Describe

S.W. Registration				Permit Number				Page No.				Date															
												Mo. Day Yr.															
1				9 10				13 14				21 22				23 24 25 26 27 28 29											
30324												032186															
30 Code				35 Parameter Value				44 Code				49 Parameter Value				58 Code				55 Parameter Value				71			
Temperature				24°C DH				7.28				spec Cond				4500											

C. Pouch
 (Collector's Signature)

TEXAS DEPARTMENT OF WATER RESOURCES

NO. SW 09438

District C.O. Org. No. 444 Work No. 9097 Lab TDH

Material Sampled: ☐ Solid waste (W); ☐ Liquid waste (L); ☐ Soil (S); ☒ Water (M);
☐ Stream (S); ☐ Other (O)

Comments

Lab Copy	Date	MAR 24 86
	Analyst	ML

Preservation: ☐ None; ☒ Ice; ☐ H₂SO₄; ☐ HNO₃

Auxiliary Tags HM 11857, HT 33275,

HT 23282, GW 03568

☐ LEACHATE: EP Toxicity Series: TDWR

30 Code				35 Parameter Value				44 Code				49 Parameter Value				58 Code				55 Parameter Value				71			
00403																											
00340																											
TOC																											
00680				27																							
GC/MS																											
VOA																											

PRIORITY POLLUTANT PEAKS
 Y. QUANTITATION AS DIO-ANTHRACENE
 AS APPROXIMATE.

APPROXIMATE CONCENTRATIONS:
 AC D-10 ANTHRACENE
 MICROGRAMS/LITER
 MILLIGRAMS/KILOGRAM

750
 trace
 87
 57

HS12-4
C MOGREG

DATE: 4/22/86

1- SAMPLE NUMBER FH6 772
2- SAMPLE NUMBER 300 044 35

ACTION LIMITS ARE APPROXIMATE

SAMPLE TYPE: 10211

SAMPLE CONDITION

ACID EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
PHENOL	< 2.5	4-CHLORO-3-CRESOL	< 2.5	4-NITROPHENOL	< 2.5
CHLOROPHENOL	↓	2,4,6-TRICHLOROPHENOL	↓	2,6-DINITRO-3-CRESOL	↓
2-NITROPHENOL	↓	2,4-DIMETHYLPHENOL	↓	PENTACHLOROPHENOL	↓
2,4-DICHLOROPHENOL	↓	2,4-DINITROPHENOL	< 2.5		

BASE NEUTRAL EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
N-NITROSO-N,N-DIMETHYLAMINE	< 1.5	ACENAPHTHYLENE	< 1.5	FLUORANTHENE	< 1.5
bis-(2-CHLOROETHYL) ETHER	↓	DIMETHYL PHTHALATE	↓	PYRENE	↓
1,3-DICHLOROBENZENE	↓	2,6-DINITROTOLUENE	↓	BENZIDINE	↓
1,4-DICHLOROBENZENE	↓	ACENAPHTHENE	↓	DUTYL BENZYL PHTHALATE	↓
1,2-DICHLOROBENZENE	↓	2,4-DINITROTOLUENE	↓	BENZ(a)ANTHRACENE	↓
bis-(2-CHLOROISOPROPYL) ETHER	↓	FLUORENE	↓	CHRYSENE	↓
HEXACHLOROETHANE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	3,3'-DICHLOROBENZIDINE	↓
N-NITROSO-DI-N-PROPYLAMINE	↓	DIEHTYL PHTHALATE	↓	bis-(2-ETHYLHEXYL) PHTHALATE	↓
NITROBENZENE	↓	DIPHENYLAMINE	↓	DI-N-OCTYL PHTHALATE	↓
ISOPHORONE	↓	N-NITROSO-DIPHENYLAMINE	↓	BENZO(j)FLUORANTHENE	↓
bis-(2-CHLOROETHOXY)METHANE	↓	1,2-DIPHENYLHYDRAZINE	↓	BENZO(k)FLUORANTHENE	↓
1,2,4-TRICHLOROBENZENE	↓	4-ISOPROPENYL PHENYL ETHER	↓	BENZO(l)PYRENE	↓
NAPHTHALENE	↓	HEXACHLOROBENZENE	↓	INDENO(1,2,3-cd)PYRENE	↓
HEXACHLOROBUTADIENE	↓	PHENANTHRENE	↓	DICENZO(a,h)ANTHRACENE	↓
HEXACHLOROCYCLOPENTADIENE	↓	ANTHRACENE	↓	BENZO(ghi)PERYLENE	↓
2-CHLORONAPHTHALENE	↓	DI-N-DECYL PHTHALATE	↓		

PESTICIDES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
alpha-BHC	< 2.5	ALDRIN	< 2.5	BETA-ENDOSULFAN	< 2.5
gamma-BHC	↓	4-4'-DDE	↓	ENDOSULFAN SULFATE	↓
BETA-BHC	↓	DIELDRIN	↓	ENDRIN	↓
delta-BHC	↓	4,4'-DDD	↓	alpha-ENDOSULFAN	↓
HEPTACHLOR	↓	4,4'-DDT	↓	HEPTACHLOR EPOXIDE	↓
ENDRIN ALDEHYDE	↓				

VOLATILE ORGANICS IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
CHLOROMETHANE	< 2.0	1,2-DICHLOROETHANE	< 2.0	1,1,2-TRICHLOROETHANE	< 2.0
BROMOMETHANE	↓	CARBON TETRACHLORIDE	↓	2-CHLOROETHYL VINYL ETHER	↓
VINYL CHLORIDE	↓	BROMODICHLOROMETHANE	↓	TRICHLOROETHYLENE	↓
CHLOROETHANE	↓	BENZENE	↓	BROMOFORM	↓
TRICHLOROFLUOROMETHANE	↓	DIBROMOCHLOROMETHANE	↓	TOLUENE	↓
CHLOROFORM	↓	1,1,1-TRICHLOROETHANE	↓	ETHYLBENZENE	↓
METHYLENE CHLORIDE	↓	1,2-DICHLOROPROPANE	↓	1,1,2,2-TETRACHLOROETHANE	↓
1,1-DICHLOROETHYLENE	↓	trans-1,3-DICHLOROPROPYLENE	↓	TETRACHLOROETHYLENE	↓
1,1-DICHLOROETHANE	↓	cis-1,3-DICHLOROPROPYLENE	↓	CHLOROBENZENE	↓
trans-1,2 DICHLOROETHYLENE	↓				

CONCENTRATION IN (CHECK ONE) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM AS DIO-ANTHRACENE IS PROVIDED, AND THE VALUES SHOULD BE STATED AS APPROXIMATE.

TENTATIVE
COMPOUND
IDENTIFICATION

APPROXIMATE CONCENTRATIONS
AS D-10 ANTHRACENE
MICROGRAMS/LITER
MILLIGRAMS/KILOGRAM

4-methyl-2-pentanol 750
C₂-benzene trace
4-(1,1-dimethylethyl)-phenol 87
octyl phenol 57

COMMENTS AND OTHER REQUESTED ANALYSES:

SAMPLE CONTAINED SEVERAL UNIDENTIFIED
COMPOUNDS IN THE 1 ppm RANGE.

SIGNATURE

DATE

Richard A. Albert

4/22/86

U. SW 09431
Site Name Lubrizol Corp
Site Location _____

Point of _____ LS1

County Harris
Method of Collection Bailer

Type Facility: ☐ Drums ☐ Tank ☒ Impoundment ☐ Landfill
☐ Waste Pile ☐ Landform ☐ Other _____
Time Collected 12:26 (am, pm) Date Shipped 3/21/86
Add. Code HM 11856, AT 23224
AT 23221, AT 03560
ODOR: ☐ Yes, ☐ No; Describe _____

S.W. Registration										Permit Number										Page No.										Date																																							
																														Mo. Day Yr.																																							
9 10										18 19 20 21 22 23 24 25 26 27 28 29																																																											
3 0 3 2 4																				0 3 2 1 8 6																																																	
30 Code										35 Parameter Value										44 Code										49 Parameter Value										58 Code										63 Parameter Value										71									
Temperature																				DH																				Spec Cond.																													

[Signature]
Collector's Signature

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849
NO. SW 00437
District C.O. Org. No. 444 Work No. 9097 Lab TDH
Material Sampled: ☐ Solid waste (W); ☐ Liquid waste (L); ☐ Soil (E); ☒ V. cell (M);
☐ Stream (S); ☐ Other (O) _____
Comments _____
(continued on back)

Received MAR 24 '86 HM 0773
APR 24 '86
Analysis HL
Preservation: ☐ None; ☒ Ice; ☐ H₂SO₄; ☐ HNO₃
HM 11856, AT 23224
Auxiliary Tag: AT 23221, AT 03560
☐ LEACHATE: EP Toxicity Series: TDWR

30 Code										35 Parameter Value										44 Code										49 Parameter Value										58 Code										63 Parameter Value										71									
0 0 4 0 3																																																																					
0 0 3 4 0																																																																					
TOC																																																																					
0 0 6 8 0																				2 0																																																	
GC/MS																																																																					
VOA																																																																					

-PRIORITY POLLUTANT PEAKS
Y. QUANTITATION AS DIO-ANTHRACENE
AS APPROXIMATE.

APPROXIMATE CONCENTRATION:
AS D-10 ANTHRACENE
MICROGRAMS/LITER
MILLIGRAMS/KILOGRAM

3200
140

NO. SW 09439
 Site Name Lubrizol Corp
 Site Location
 County Harris
 Method of Collection Bailer
 Point of Collection 444 7071 1077
 653 MW-1 (CB)
 Type of Container ☐ Drum ☐ Tank ☒ Impoundment ☐ Landfill
☐ W ater ☐ Landfarm ☐ Other
 Time Collected 12:02 (am, pm) Date Shipped 3/24/86
 Add. CDC #s HM 11858, AT 23309, GC 03575
 ODOR: ☐ Yes ☐ No; Describe

S.W. Registration				Permit Number				Page No.				Date			
1	9	10	18	19	21	22	23	24	25	26	27	28	29		
30324				032186											

(Collector's Signature) *OBouch*

30	Code	35	Parameter Value	44	Code	49	Parameter Value	58	Code	63	Parameter Value	71
	Temperature		24°C		PH		7.03		Spec Cond		1750	

TEXAS DEPARTMENT OF WATER RESOURCES TDWR-0849
 NO. SW 09439
 District C-2 Org. No. 444 Work No. 9097 Lab TDM
 Material Sampled: ☐ Solid waste (W); ☐ Liquid waste (L); ☐ Soil (E); ☒ Water (W);
☐ Stream (S); ☐ Other (O)
 Comments: 24 + 200

DATE 3/24/86
 REC'D 0724
 ANALYST SIGNATURE *1-1-16*

PRESERVATION: ☐ None; ☒ Ice; ☐ H₂SO₄; ☐ HNO₃
 Auxiliary Tags HM 11858, AT 23309, GC 03575
☐ LEACHATE: EP Toxicity Series; TDWR

30	Code	35	Parameter Value	44	Code	49	Parameter Value	58	Code	63	Parameter Value	71
0	0	4	0	3								
0	0	3	4	0								
0	0	6	8	0								
GC/MS												
VOA												

PRIORITY POLLUTANT PEAKS
 QUANTITATION AS D10-ANTHRACENE
 IS APPROXIMATE.

APPROXIMATE CONCENTRATIONS
 AS D-10 ANTHRACENE
 () MICROGRAMS/LITER
 () MILLIGRAMS/KILOGRAM

DATE: 4/22/86

TOM SAMPLE NUMBER 516-773

TWO SAMPLE NUMBER 516-9431

* DETECTION LIMITS ARE APPROXIMATE

SAMPLE TYPE: WELL

SAMPLE CONDITION: 100%
100%ACID EXTRACTABLES IN (CHECK ONE) ☒ MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
PHENOL	<20	4-CHLORO-3-CRESOL	<20	4-NITROPHENOL	<20
CHLOROPHENOL	↓	2,4,6-TRICHLOROPHENOL	↓	2,6-DINITRO-3-CRESOL	↓
2-NITROPHENOL	↓	3,4-DIMETHYLPHENOL	↓	PENTACHLOROPHENOL	↓
3,4-DICHLOROPHENOL	↓	2,4-DINITROPHENOL	<20		

BASE NEUTRAL EXTRACTABLES IN (CHECK ONE) ☒ MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
N-NITROSO-N,N-DIETHYLAMINE	<20	ACENAPHTHYLENE	<20	FLUORANTHENE	<20
bis-(2-CHLOROETHYL) ETHER	↓	DIMETHYL PHTHALATE	↓	PYRENE	↓
1,3-DICHLOROBENZENE	↓	2,6-DINITROTOLUENE	↓	BENZIDINE	↓
1,4-DICHLOROBENZENE	↓	ACENAPHTHENE	↓	BUTYL BENZYL PHTHALATE	↓
1,2-DICHLOROBENZENE	↓	2,4-DINITROTOLUENE	↓	BENZO(a)ANTHRACENE	↓
bis-(2-CHLOROISOPROPYL) ETHER	↓	FLUORENE	↓	CHRYSENE	↓
HEXACHLOROETHANE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	3,3'-DICHLOROBENZIDINE	↓
N-NITROSO-DI-N-PROPYLAMINE	↓	DIMETHYL PHTHALATE	↓	bis-(2-ETHYLHEXYL) PHTHALATE	↓
NITROBENZENE	↓	DIPHENYLAMINE	↓	DI-N-OCTYL PHTHALATE	↓
ISOPHTHALENE	↓	N-NITROSO-DIPHENYLAMINE	↓	BENZO(j)FLUORANTHENE	↓
bis-(2-CHLOROETHOXY) METHANE	↓	1,2-DIPHENYLHYDRAZINE	↓	BENZO(k)FLUORANTHENE	↓
1,2,3-TRICHLOROBENZENE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	BENZO(a)PYRENE	↓
NAPHTHALENE	↓	HEXACHLOROBIENZYNE	↓	INDENO(1,2,3-cd)PYRENE	↓
HEXACHLOROBUTADIENE	↓	PHENANTHRENE	↓	DIBENZO(a,h)ANTHRACENE	↓
HEXACHLOROCYCLOPENTADIENE	↓	ANTHRACENE	↓	BENZO(ghi)PERYLENE	↓
2-CHLORONAPHTHALENE	↓	DI-N-BUTYL PHTHALATE	↓		

PESTICIDES IN (CHECK ONE) ☒ MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
alpha-BHC	<20	ALDRIN	<20	BETA-ENDOSULFAN	<20
gamma-BHC	↓	4,4'-DDE	↓	ENDOSULFAN SULFATE	↓
BETA-BHC	↓	DELDRIN	↓	ENDRIN	↓
delta-BHC	↓	4,4'-DDD	↓	alpha-ENDOSULFAN	↓
HEPTACHLOR	↓	4,4'-DDT	↓	HEPTACHLOR EPOXIDE	↓
ENDRIN ALDEHYDE	↓				

VOLATILE ORGANICS IN (CHECK ONE) ☒ MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM

NAME	AMT	NAME	AMT	NAME	AMT
CHLOROMETHANE	<20	1,2-DICHLOROETHANE	<20	1,1,2-TRICHLOROETHANE	<20
BROMOMETHANE	↓	CARBON TETRACHLORIDE	↓	2-CHLOROETHYL VINYL ETHER	↓
VINYL CHLORIDE	↓	BROMODICHLOROMETHANE	↓	TRICHLOROETHYLENE	↓
CHLOROETHANE	↓	BENZENE	↓	BROMOFORM	↓
TRICHLOROFLUOROMETHANE	↓	DIBROMODICHLOROMETHANE	↓	TOLUENE	↓
CHLOROFORM	↓	1,1,1-TRICHLOROETHANE	↓	ETHYLBENZENE	↓
METHYLENE CHLORIDE	↓	1,2-DICHLOROPROPANE	↓	1,1,2,2-TETRACHLOROETHANE	↓
1,1-DICHLOROETHYLENE	↓	trans-1,3-DICHLOROPROPYLENE	↓	TETRACHLOROETHYLENE	↓
1,1-DICHLOROETHANE	↓	cis-1,3-DICHLOROPROPYLENE	↓	CHLOROBENZENE	↓
trans-1,2-DICHLOROETHYLENE	↓				

BY COMPARISON WITH EPA/NIH MASS SPECTRAL LIBRARY. QUANTITATION AS DIO-ANTHRA-CENE
IS PROVIDED, AND THE VALUES SHOULD BE REGARDED AS APPROXIMATE

APPROXIMATE CONCENTRATION:

AS 1-10 ANTHRACENE

MICROGRAMS/LITER

MILLIGRAMS/KILOGRAM

TENTATIVE
COMPOUND
IDENTIFICATION

3,5-dichloris (2-methyl-1-propyne) 3200
 (2-methyl-ethyl)phenol 140

COMMENTS AND OTHER REQUESTED ANALYSES:

ALSO QUANTITATED IN mg/l

T-BUTYL ALCOHOL - 1200

SAMPLE CONTAINED SEVERAL UNIDENTIFIED
COMPOUNDS IN THE 1 PPM RANGE.

SIGNATURE

DATE

Richard A. Albert

4/22/86

DATE: 4/22/84

 TEN SAMPLE NUMBER 100 174
 TWO SAMPLE NUMBER 100 437

IS PROVIDED, AND THE VALUES SHOULD BE CONSIDERED APPROXIMATE.

* DETECTION LIMITS ARE APPROXIMATE

SAMPLE TYPE: WELL

SAMPLE CONDITION: INSTANT

ACID EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
PHENOL	< 1.5	4-CHLORO-3-CRESOL	< 1.5	4-NITROPHENOL	< 3.0
CHLOROPHENOL	↓	2,4,6-TRICHLOROPHENOL	↓	2,6-DINITRO-2-CRESOL	↓
2-NITROPHENOL	↓	2,4-DIMETHYLPHENOL	↓	PENTACHLOROPHENOL	↓
2,4-DICHLOROPHENOL	↓	2,4-DINITROPHENOL	< 3.0		

BASE NEUTRAL EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
N-NITROSO-N-DIMETHYLAMINE	< 3	ACENAPHTHYLENE	< 3	FLUORANTHENE	< 3
bis-(2-CHLOROETHYL) ETHER	↓	DIMETHYL PHTHALATE	↓	PYRENE	↓
1,3-DICHLOROBENZENE	↓	2,6-DINITROTOLUENE	↓	BENZIDINE	↓
1,4-DICHLOROBENZENE	↓	ACENAPHTHENE	↓	DUTYLBENZYL PHTHALATE	↓
1,2-DICHLOROBENZENE	↓	2,4-DINITROTOLUENE	↓	BENZO(a)ANTHRACENE	↓
bis-(2-CHLORO) ISOPROPYL ETHER	↓	FLUORENE	↓	CHRYSENE	↓
HEXACHLOROETHANE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	3,3'-DICHLOROBENZIDINE	↓
N-NITROSO-DI-N-PROPYLAMINE	↓	DIETHYL PHTHALATE	↓	bis-(2-ETHYLHEXYL) PHTHALATE	↓
NITROBENZENE	↓	DIPHENYLAMINE	↓	DI-n-OCTYL PHTHALATE	↓
ISOPHORENE	↓	N-NITROSDIPHENYLAMINE	↓	BENZO(j)FLUORANTHENE	↓
bis-(2-CHLOROETHOXY) METHANE	↓	1,2-DIPHENYLHYDRAZINE	↓	BENZO(h)FLUORANTHENE	↓
1,2,4-TRICHLOROBENZENE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	BENZO(a)PYRENE	↓
NAPHTHALENE	↓	HEXACHLOROBEZENE	↓	INDENO(1,2,3-cd)PYRENE	↓
HEXACHLOROBUTADIENE	↓	PHENANTHRENE	↓	DIBENZO(a,h)ANTHRACENE	↓
HEXACHLOROCYCLOPENTADIENE	↓	ANTHRACENE	↓	BENZO(ghi)PERYLENE	↓
2-CHLORONAPHTHALENE	↓	DI-n-DECYL PHTHALATE	↓		

PESTICIDES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
alpha-BHC	< 1.5	ALDRIN	< 1.5	Beta-ENDOSULFAN	< 3.0
gamma-BHC	↓	4,4'-DDE	↓	ENDOSULFAN SULFATE	↓
Beta-BHC	↓	DIELDRIN	↓	ENDRIN	↓
delta-BHC	↓	4,4'-DDD	↓	alpha-ENDOSULFAN	↓
HEPTACHLOR	↓	4,4'-DDT	↓	HEPTACHLOR EPOXIDE	↓
ENDRIN ALDEHYDE	↓				

VOLATILE ORGANICS IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM:

NAME	AMT	NAME	AMT	NAME	AMT
CHLOROETHANE	< 3	1,2-DICHLOROETHANE	< 3	1,1,2-TRICHLOROETHANE	< 3
BROMOETHANE	↓	CARBON TETRACHLORIDE	↓	2-CHLOROETHYL VINYL ETHER	↓
VINYL CHLORIDE	↓	BROMODICHLOROETHANE	↓	TRICHLOROETHYLENE	3.6
CHLOROETHANE	↓	BENZENE	↓	BROMOFORM	< 3
TRICHLOROFLUOROETHANE	↓	DIBROMOCHLOROETHANE	↓	TOLUENE	↓
CHLOROFORM	↓	1,1,1-TRICHLOROETHANE	↓	ETHYLBENZENE	↓
METHYLENE CHLORIDE	↓	1,2-DICHLOROPROPANE	↓	1,1,2,2-TETRACHLOROETHANE	↓
1,1-DICHLOROETHYLENE	↓	trans-1,3-DICHLOROPROPYLENE	↓	TETRACHLOROETHYLENE	↓
1,1-DICHLOROETHANE	↓	cis-1,3-DICHLOROPROPYLENE	↓	CHLOROETHENE	↓
trans-1,2-DICHLOROETHYLENE	TRACE				

TENTATIVE

COMPOUND

IDENTIFICATION

APPROXIMATE CONCENTRATIONS

AS D-10 ANTHRACENE

() MICROGRAMS/LITER

() MILLIGRAMS/KILOGRAM

see below

COMMENTS AND OTHER REQUESTED ANALYSES:

SAMPLE CONTAINED LOW PPB AMOUNTS OF SAME
 UNIDENTIFIED COMPOUNDS FOUND IN SW 7437
 IN ~1 PPM AMOUNTS.

SIGNATURE

DATE

Richard Willmet

4/22/84

FY 1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

OK

DN
1-7-85

1. EPA ID: 71X1041067638

2. HANDLER NAME: Lubrizol Corp

3. ADDRESS:

Contact Person: M ✓

5. DATE OF INITIAL EVALUATION WHICH IS THE BASIS FOR THIS REPORT: 85/09/10

5a. AGENCY RESPONSIBLE FOR EVALUATION:

Put code in box E

Choose one

E = EPA

S = State

J = Joint

C = Contractor/EPA

O = Other

B = Contractor/State

X = Oversight

6. TYPE OF EVALUATION COVERED BY THIS REPORT:

1

Put code in box

Choose one

1 = Evaluation Inspection

2 = Case Development

3 = Record Review

4 = Ground Water Monitoring Evaluation

5 = Follow Up

6 = Other - Citizen Complaint

7 = Other - Part B Call-In

8 = Other - Withdrawal Candidate

9 = Other - Closed Facility

10 = Other - General

7. DATE OF EVALUATION COVERED BY THIS REPORT (enter only if different from 5):

85/09/10

8. AREA AND CLASS OF VIOLATION (Enter 'X' in appropriate box if violations found. Enter '0' if no violations found in Area evaluated. Enter '2' to indicate area of interest.)

Class of Violation

Area of Violation

GWM

CL/PC

Fin.Res

Pt. B

Compl.Sch

Manifest

Other

I

X

0

0

0

0

0

II

0

0

0

0

0

X

9. ENFORCEMENT ACTIONS:

Class	Area of Violation	Type (use code)	Date Action Taken	Compliance Dates		Penalty		Resp.Ag. (use code)	Resp. Pers (3 initials)
				Scheduled	Actual	Assessed	Collected		
1	GW	84	85/01/25					5	

Codes for Types of Enforcement Actions: 03 = Warning Letter
05 = Administrative Order
10 = Informal
(See instructions for additional codes)

11 = Filed Civil Action
12 = Filed Criminal Action
15 = §3008(h) Final Order
14 = Referral to EPA

Codes for Resp. Agency: E = EPA
S = State
X = EPA oversight

9a. STATUS OF HANDLER WITH COMPLIANCE SCHEDULE OF ORDERS: Meeting compliance schedule Yes ___ No ___ Status Date ___/___/___

10. Comments: Sample results indicate ground water contamination - FY85 In

(Limit each comment to 80 characters. Up to 99 comments are possible.)

TEXAS DEPARTMENT OF WATER RESOURCES

HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG


☒ NEW ☒ UPDATE

TDWR ID: 30324

1. EPA ID: TXD041067638

INDUSTRY: LUBRIZOL

DISTRICT: 07

2. INDUSTRY NAME: Lubrizol Corp

PHONE: 713-479-2851

3. SITE ADDRESS: Tidal Road Deer Park, TX ZIP: 77536

COUNTY: Harris

OCT 11 1985

7. DATE SUBT: 10-15-84
(CENTRAL OFFICE USE ONLY)FACILITY: GET
(G,F,T,
1,2,3)

4. MAJOR/NONMAJOR: M

6. TYPE OF EVALUATION: EV

(CEI-EV, EC; CME-GW; OTHER-CL, SW, OT; SAMPLE-SA;
FOLLOW UP-FO; RECORD REVIEW-RC, RF; FOR
HIGH PRIORITY PLACE H IN 1ST BLOCK)

5. DATE OF INITIAL EVALUATION: 09-10-85

RESPONSIBLE AGENCY: S

E v a l	D e g	Date Notice of Violation	Date Conference	Date Refer. to Austin for Enf.	Date High Prior. Determination	Date of Estim. Compliance	Date Response is Due for NOV	Date of Actual Compliance	Resolv/Unres/ Compliant
GW	<input checked="" type="checkbox"/>	1		01-25-85					U
CL	<input checked="" type="checkbox"/>			01-25-85					
PT	<input type="checkbox"/>								
MA	<input checked="" type="checkbox"/>								
FI	<input checked="" type="checkbox"/>								
SC	<input type="checkbox"/>								
OT	<input checked="" type="checkbox"/>	2	10-07-85				11-08-85		U

COMMENTS: (COUNTY)

001 101 006C 0 U 116 2 U 117 2 U 264 2 U 004 0 U

1 3 5 7 9 12 14 16 18 21 23 25 27 30 32 34 36 39 41 43 45 48 50 52 54 57

59 61 63 66 68 70 72 75 77 79 81 84 86 88 90 93 95 97 99 102 104 106

002 Sample results indicate ground water contamination - BY 85 inspection

WORK NO: 9091

NO. OF SAMPLES: 0

SUBMITTED BY: Mac Vilas

OCT 11 1985



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

Martinez
5-15-86

MEMORANDUM

DATE: *5/8/86*

SUBJECT: RCRA Compliance Monitoring Inspection Report(s)

FROM: David Peters, Chief *David Peters*
Hazardous Waste Section (6E-SH)

TO: Bill Taylor, Chief
Enforcement Section (6H-CE)

ATTN: Linda Thompson

	Lead CEI
	Lead CEI/Case Dev.
	Oversight CEI
	CME Sampling
	Lead Sampling
<input checked="" type="checkbox"/>	LOIS
	other/addendum

The attached RCRA Compliance Monitoring Inspection Report(s) have been prepared and reviewed by Environmental Services (6E) and are being forwarded to you for your information and action.

<u>Facility</u>	<u>EPA I.D. No.</u>	<u>Apparent Violation</u>
<i>LUBRIZOL</i>	<i>TxD041067638</i>	Yes <input checked="" type="radio"/> No

<input type="checkbox"/>	Generators
<input type="checkbox"/>	Generators Supplement
<input type="checkbox"/>	TSD Facilities
<input type="checkbox"/>	Container Storage
<input type="checkbox"/>	Tanks
<input type="checkbox"/>	Thermal Treatment
<input type="checkbox"/>	Surface Impoundments
<input type="checkbox"/>	Waste Piles
<input type="checkbox"/>	Land Treatment
<input type="checkbox"/>	Land Fills
<input type="checkbox"/>	Chemical, Physical & Biological Treatment
<input type="checkbox"/>	Incinerators
<input type="checkbox"/>	Transporters
<input type="checkbox"/>	Comprehensive Ground-Water Evaluation
<input checked="" type="checkbox"/>	Closure
<input checked="" type="checkbox"/>	Post-Closure
<input checked="" type="checkbox"/>	LOIS
<input type="checkbox"/>	ERTEC
<input checked="" type="checkbox"/>	Attachments
<input type="checkbox"/>	Photos

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

DATE:

SUBJECT: Transmittal Memo - Compliance Monitoring Inspection Report

FROM: Lonnie Ross (Inspector)

TO: Dave Peters, Chief
Hazardous Waste Section (6ES-SH)

A compliance monitoring inspection was conducted on 4/28/86
Date(s)

at the following location:

Name: Lubrizol

Address: 4100 Tidal Rd. Deer Park, Texas

EPA I.D. Number: Tx D041067638 NPDES Permit No. Tx 0007048

Type of inspection: Joint () Lead (✓)
Type of facility: Federal () Municipal () Nonmunicipal (✓)

Compliance Monitoring Reports Attached: TSCA () RCRA (✓)

Comments:

No Lois violations noted.

I. SITE IDENTIFICATION

A. Site Name		B. Street (or other identifier)	
<u>Lubrizol Deer Park Plant</u>		<u>4100 Tidal</u>	
C. City	D. State	E. Zip Code	F. County Name
<u>Deer Park</u>	<u>Texas</u>	<u>77536</u>	<u>Harris</u>
G. Site Operator Information			
1. Name		2. Telephone Number	
<u>Same AS Above</u>		<u>713/479-2851</u>	

3. Street	4. City	5. State	6. Zip Code
H. Site Description			
<u>Chemical Plant</u>			
I. Latitude (deg.-min.-sec.)		Longitude (deg.-min.-sec.)	
J. Type of Ownership			
<u> </u> 1. Federal <u> </u> 2. State <u> </u> 3. County <u> </u> 4. Municipal <u> </u> 5. Private <u> </u>			
K. <u>X</u> 1. Generator <u> </u> 2. Transporter <u>X</u> 3. Treatment <u> </u> 4. Storage <u> </u> 5. Disposal			

INSPECTION INFORMATION

A. Principal Inspector Information	
1. Name	2. Title
<u>LONNIE ROSS</u>	<u>ENVIRONMENTAL Protection Specialist</u>

3. Organization	4. Telephone No. (area code & No.)
<u>U.S. EPA, Region VI ESD</u>	<u>214/767-9787</u>
B. Inspection Participants	
<u>Robert Copes</u>	<u>Lubrizol</u>
<u>Julius Rexas Jr.</u>	<u>Lubrizol</u>

RCRA Loss of Interim Status Checklist

1. Does facility have an EPA Identification No.? ☒ Yes ☐ No
A. If yes, EPA I.D. No.: TXD041067638
B. If no, explain: _____
2. Describe all hazardous waste management units at the facility by completing the attached table.
3. Obtain all manifests from the period 3-6 months prior to November 8, 1985, (if the number exceeds 20 or copying service is not available, complete the attached table in lieu of copying manifests). Also obtain copies of the manifests generated after November 8, 1985. Complete the manifest portion of the Generator Checklist (Section C). For an additional manifest violations on a separate sheet. *See attached ROC*
4. Does the facility have a groundwater monitoring system? ☒ Yes ☐ No
If yes, complete the appropriate sections of the Ertec Checklist.
If no, explain in narrative. *See Addendum*
5. Has the facility received waste from offsite since November 19, 1980? ☐ Yes ☒ No
☐ Yes ☒ No
- Since November 8, 1985?
If yes, to either question describe the treatment, storage or disposal practices.
6. Have closure activities begun at the facility? ☒ Yes ☐ No
If yes, list the unit or units and complete the closure checklist and post/closure checklist if applicable. If possible, please attach a copy of the closure plan. *See attached Closure plan for NO. 1 lift station & Equalization Basin.*
7. Note in a narrative any evidence of the facility placing hazardous waste in unit(s) that have lost interim status. Document with photographs, if possible.

Facility:

[illegible]

Manifest # and Date	TSD	Transporter	Quantity	Type of Waste
<i>addendum to follow.</i>				

Site name: Lubrizol
I.D. no.: _____
TXD 041067638

Closure

A. Does the facility have a closure plan?

☒ Yes ☐ No

1. Does the plan include:

a. A description of how and when the facility will be partially, then finally closed?

☒ Yes ☐ No

b. An up-to-date estimate of the maximum inventory of wastes in storage and treatment at any time during the life of the facility?

☒ Yes ☐ No

c. A description of decontamination procedures for facility equipment?

☒ Yes ☐ No

d. An estimate of expected year of closure?

☐ Yes ☒ No

Closure is under way.
2. Does the plan include a schedule for final closure? If yes, does it include:

☒ Yes ☐ No

a. Time estimates for each phase of closure for each area?

☒ Yes ☐ No

b. Total time estimate for closure?

☒ Yes ☐ No

3. Using narrative explanations sheet, give a brief summary of how the facility plans to close each area of hazardous waste management; or attach a copy of the closure plan.

4. Does the plan address all areas of hazardous waste management?

☒ Yes ☐ No

5. Has the plan been amended as necessary to reflect changes in facility operations or design?

☒ Yes ☐ No

6. Are cost estimates available and modified as necessary? If yes, give latest cost estimate and date of adjustments. *See Closure plans*

☒ Yes ☐ No

B. Have closure activities begun at the facility?

☒ Yes ☐ No

TWC is who they have been corresponding to.
1. If yes, *with about the closure.*

a. Was the closure plan submitted to the Regional Administrator at least 180 days prior to beginning these activities?

☐ Yes ☐ No *NA*

b. Were all wastes treated or disposed of within 90 days of the final receipt of wastes?

☐ Yes ☐ No *NA*

Site Name: Lubrizol
I.D. no.: _____

TXD004106763B

2

If no, give explanation including waivers or extensions granted by Regional Administrator.

_____ Yes _____ No NA

- c. Do the actual closure activities correspond to those written in the closure plan?

_____ Yes _____ No NA

If no, include narrative explanation.

2. Was closure completed within 180 days of receipt of final volume of wastes?

_____ Yes _____ No NA

If no, give explanation, including waivers or extensions granted by the Regional Administrator.

_____ Yes _____ No NA

3. At completion, did the facility submit a certification of closure to the Regional Administrator? If yes, was it signed by both the owner/operator and an independent registered professional engineer?

_____ Yes _____ No NA

_____ Yes _____ No NA

- No. 1 lift Station
- Equalization Basin

Site name: Lubrizol
I.D. Number: _____
TxDO41067638

SURFACE IMPOUNDMENTS CHECKLIST
Subpart K - Surface Impoundments 265.220

NOTE: Check all surface impoundments. Fill out one checklist for any impoundment in violation. Fill out one checklist for all other impoundments in compliance. Indicate number of surface impoundments at the facility.

1. Are there any surface impoundments which are not being used which the facility does not plan to use in the future? ☒ Yes ☐ No
 - a. If yes, has all hazardous waste and hazardous waste residue been removed from the impoundment? ☒ Yes ☐ No
In the process of closure
2. Are impoundments presently used to treat or store waste? ☐ Yes ☒ No
3. Does the impoundment appear to maintain at least 2 feet (60 cm) of freeboard? *NA* ☐ Yes ☐ No
 - a. If no, what was the freeboard? _____
4. Is there evidence of overtopping of the dike? *NA* ☐ Yes ☐ No
If yes, please describe. _____

5. Do earthen dikes have a protective cover to minimize wind and water erosion? *NA* ☐ Yes ☐ No
Provide description of containment. _____

6. What wastes are treated or stored in the impoundment? (Use narrative explanations sheet). *NA*
7. Are hazardous wastes chemically treated in the impoundment which are substantially different from wastes previously treated or using different treatment methods than previously used? ☐ Yes ☐ No *NA*
 - a. If yes, are
 1. Waste analyses and trial tests conducted on these wastes? ☐ Yes ☐ No
 - OR
 2. Does the owner/operator have written documented information on similar treatment of similar wastes under similar operating conditions? ☐ Yes ☐ No
 - b. Is this information retained in the operating record? ☐ Yes ☐ No

8. Is the impoundment inspected daily to check freeboard level? NA Yes ☐ No ☐
9. Is the impoundment, dike and vegetation surrounding the dike inspected to detect leaks, deterioration or failures at least once a week? Yes ☐ No ☐
10. Are ignitable or reactive wastes placed in the impoundment? Yes ☐ No ☐
- a. If no, do not complete b and c.
- b. If yes, are they treated, rendered or mixed before or immediately after placement in the impoundment so it no longer meets the definition of ignitable or reactive? Yes ☐ No ☐
- OR
- c. Is the impoundment used solely for emergencies? Yes ☐ No ☐
1. If yes, has further treatment, storage or disposal been conducted on these wastes? Describe this situation.

11. Has the facility ever placed incompatible wastes in the impoundment? ☐ Yes ☒ No
- a. If yes, what were the results. (Use narrative explanation sheet.) (Look for signs of mixing of incompatible wastes e.g., fire, toxic mist, heat generation, bulging containers, etc.)

12. What is the impoundment lined with? Natural Clay

Effective May 1985

13. Is the impoundment a new unit, replacement of an existing unit or lateral expansion of an existing unit? NA Yes ☐ No ☐
- If yes,
- a. Has waste been received since May 1985? Yes ☐ No ☐
- If yes,
1. Has the owner/operator notified the Regional Administrator (or state authority) at least 60 days prior to receiving the waste? Yes ☐ No ☐
2. Has the owner/operator filed an application for a final determination regarding the issuance of the permit within 6 months of the notice to receive wastes? Yes ☐ No ☐

3

NA

3. Is the impoundment completed with two or more liners and a leachate collection system between such liners? ☐ Yes ☐ No
4. Does the impoundment have a groundwater monitoring system in place? ☐ Yes ☐ No

Date 5/8/86Site LubrizolI.D.# TxD08974/532

Lubrizol Corporation of Deer Park, Texas was inspected on 4/28/86. During the in-briefing, Mr. Robert Copes informed me that the reason the No. 1 Lift Station, and Equalization Basin were being closed was because an enforcement order from the TWC. Actual closure activities are being conducted at this time. I was also informed that their waste stream is hazardous only due to corrosivity (D002).

The No. 1 lift station and Equalization Basin were part of Lubrizol waste treatment process. To replace the lift station impoundment, a fiberglass tank was installed. It is installed in a below grade concrete containment liner. The equalization basinth has been completely by-passed.

Lubrizol uses chemical & biological treatment of their waste stream. The treatment process is detailed in the attached schematic.

The NPDES permit no. is TxD0007048.

The closure activity occurring at Lubrizol are on schedule with the enforcement order from TWC.

The only off-site shipment of waste have occurred due to closure activities.

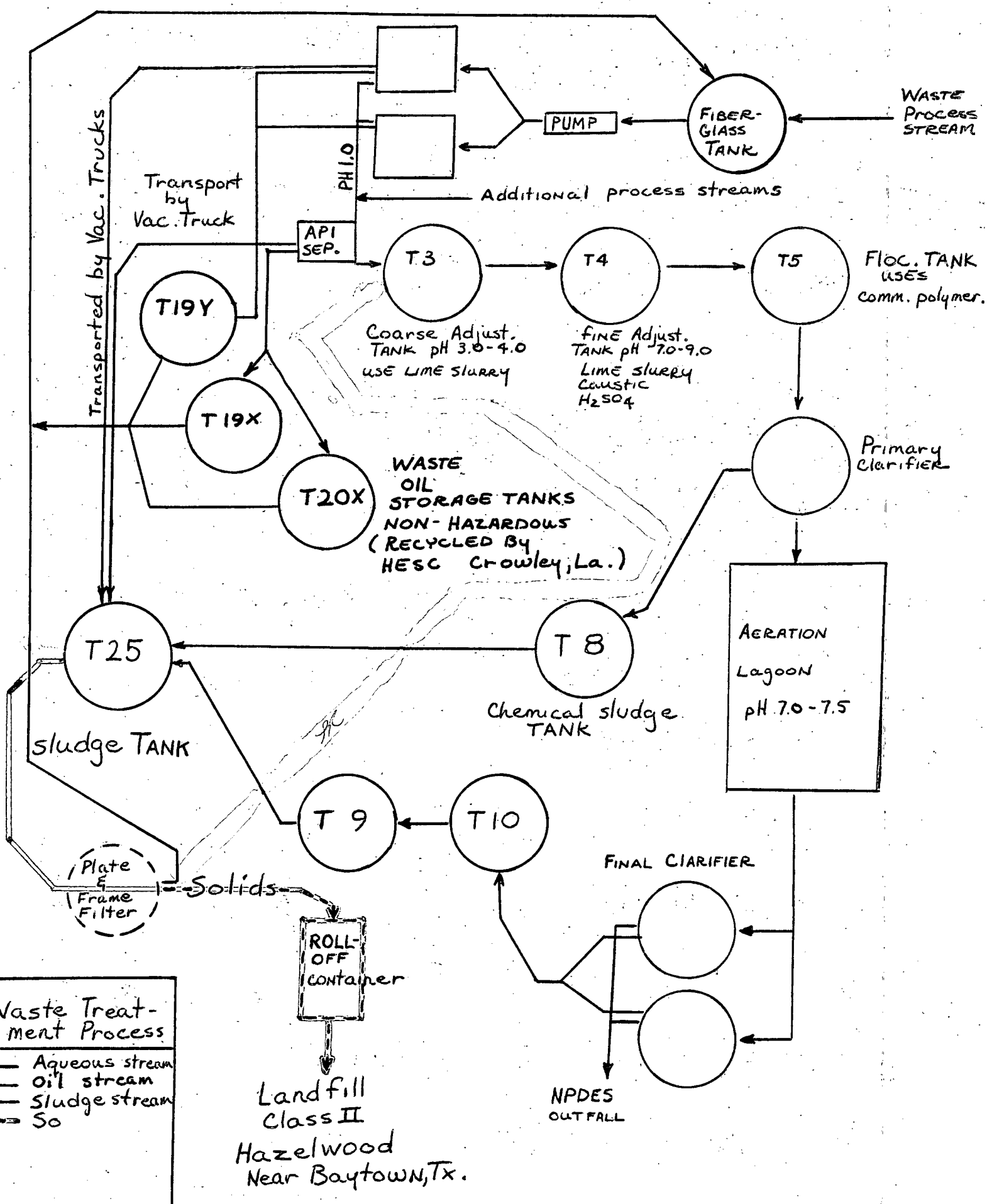
Seeth attached manifest.

Page _____

Manifest are to follow in an addendum.

Additional information to follow in an addendum.

SEPARATOR (API TYPE)



Waste Treatment Process

- Aqueous stream
- oil stream
- Sludge stream
- So

FY 1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

1. EPA ID: TXD0411468836 K6 3-14-86

2. HANDLER NAME: _____

3. ADDRESS: _____ Contact Person: M C L

5. DATE OF INITIAL EVALUATION WHICH IS THE BASIS FOR THIS REPORT: 85/12/17 5a. AGENCY RESPONSIBLE FOR EVALUATION:

Ado

Put code in box 5
Choose one

E = EPA
S = State
J = Joint
C = Contractor/EPA

O = Other
B = Contractor/State
X = Oversight

6. TYPE OF EVALUATION COVERED BY THIS REPORT: 7

Put code in box
Choose one

1 = Evaluation Inspection
2 = Sampling
3 = Record Review
4 = Ground Water Monitoring Evaluation
5 = Follow Up

6 = Other - Citizen Complaint
7 = Other - Part B Call-In
8 = Other - Withdrawal Candidate
9 = Other - Closed Facility
10 = Other - General

7. DATE OF EVALUATION COVERED BY THIS REPORT (enter only if different from 5): 85/12/17 11 = Case Development

8. AREA AND CLASS OF VIOLATION (Enter 'X' in appropriate box if violations found. Enter '0' if no violations found in Area evaluated. Enter '2' to indicate area of interest.)	Class of Violation	Area of Violation						
		GWM	CL/PC	Fin.Res	Pt. B	Cmpl.Sch	Manifest	Other
	I	X						
	II	0						

9. ENFORCEMENT ACTIONS:

Class	Area of Violation	Type (use code)	Date Action Taken	Compliance Dates		Penalty		Resp.Ag. (use code)	Resp. Pers (3 initials)
				Scheduled	Actual	Assessed	Collected		

Codes for Types of Enforcement Actions:

03 = Warning Letter

05 = Administrative Order

10 = Informal

(See instructions for additional codes)

11 = Filed Civil Action

12 = Filed Criminal Action

15 = \$3008(h) Final Order

14 = Referral to EPA

Codes for Resp. Agency:

E = EPA

S = State

X = EPA oversight

9a. STATUS OF HANDLER WITH COMPLIANCE SCHEDULE OF ORDERS: Meeting compliance schedule Yes ☐ No ☐ Status Date / /

10. Comments: Records and response unsatisfactory

(Limit each comment to 80 characters. Up to 99 comments are possible.)

TEXAS WATER COMMISSION

HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG


☐ NEW ☐ UPDATE

TX ELEC

TDWR ID: 31340

1. EPA ID: TXD041468836

INDUSTRY: TX ELEC

DISTRICT: 06

2. INDUSTRY NAME: Texas Electric Cooperatives, Inc.

PHONE: (409) 384-4633

3. SITE ADDRESS: P.O. Box 570
Jasper, TX

ZIP: 75951

COUNTY: Jasper

7. DATE SUBT: 02-15-86
(CENTRAL OFFICE USE ONLY)FACILITY: (G, F, T) 04
(S, L)
(1, 2, 3)

4. C, F, S: 42

6. TYPE OF EVALUATION: 04

CEI - EV, EC, EP, EB
CME - GW
OTHER - CL, SW, OT, FEFOLLOW UP - FO
SAMPLE - SA
CASE DEVELOPMENT - CD

5. DATE OF INITIAL EVALUATION: 12-17-85

RESPONSIBLE AGENCY: S

E v a l		D e g	AREA AND CLASS OF VIOLATION (INCLUDES DISTRICT LEVEL ENFORCEMENT ACTIONS)												Resolv/Unres/ Compliant	
			Date Notice of Violation	Date Conference	Date Refer. to Austin for Enf.	Date High Prior. Determination	Date Response is Due for NOV	Date of Estim. Compliance	Date of Actual Compliance							
GW	X	1														U
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122
CL																
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122
PT																
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122
MA																
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122
FI																
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122
SC																
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122
OT																
56 57	58	59	61	68	70	77	79	86	88	95	97	104	106	113	115	122

COMMENTS: (COUNTY)

001 121

1 3 5 7 9 12 14 16 18 21 23 25 27 30 32 34 36 39 41 43 45 48 50 52 54 57

59 61 63 66 68 70 72 75 77 79 81 84 86 88 90 93 95 97 99 102 104 106

002 Records & Response Unsatisfactory

WORK NO: 9097

NO. OF SAMPLES: 24

SUBMITTED BY: Mary Ann Jones

FY 1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

1. EPA ID: TXD04110676381

2. HANDLER NAME: _____

3. ADDRESS: _____

KG 2-14-86
Contact Person: _____

5. DATE OF INITIAL EVALUATION WHICH IS THE BASIS FOR THIS REPORT: / /

C03

5a. AGENCY RESPONSIBLE FOR EVALUATION:
Put code in box ☐
Choose one

E = EPA
S = State
J = Joint
C = Contractor/EPA
O = Other
B = Contractor/State
X = Oversight

6. TYPE OF EVALUATION COVERED BY THIS REPORT:
Put code in box
Choose one

II

1 = Evaluation Inspection
2 = Sampling
3 = Record Review
4 = Ground Water Monitoring Evaluation
5 = Follow Up

6 = Other - Citizen Complaint
7 = Other - Part B Call-In
8 = Other - Withdrawal Candidate
9 = Other - Closed Facility
10 = Other - General

7. DATE OF EVALUATION COVERED BY THIS REPORT (enter only if different from 5): / /

11 = Case Development

8. AREA AND CLASS OF VIOLATION
(Enter 'X' in appropriate box if violations found. Enter '0' if no violations found in Area evaluated. Enter '2' to indicate area of interest.)

Class of Violation	Area of Violation						
	GM	CL/PC	Fin.Res	Pt. B	Compl.Sch	Manifest	Other
I							
II							

9. ENFORCEMENT ACTIONS:

Class	Area of Violation	Type (use code)	Date Action Taken	Compliance Dates		Penalty		Resp.Ag. (use code)	Resp. Pers (3 initials)
				Scheduled	Actual	Assessed	Collected		
1	GW	03	85-5-15					S	
1	GW	11	85-10-11			200,000		S	

Codes for Types of Enforcement Actions: 03 = Warning Letter
05 = Administrative Order
10 = Informal
(See instructions for additional codes)

11 = Filed Civil Action
12 = Filed Criminal Action
15 = \$3008(h) Final Order
14 = Referral to EPA

Codes for Resp. Agency: E = EPA
S = State
X = EPA oversight

9a. STATUS OF HANDLER WITH COMPLIANCE SCHEDULE OF ORDERS: Meeting compliance schedule Yes No Status Date / /

10. Comments: _____

(Limit each comment to 80 characters. Up to 99 comments are possible.)

FY 1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

1. EPA ID: TXD0411067638

2. HANDLER NAME: _____

3. ADDRESS: _____

KG 2-14-86
Contact Person: _____

5. DATE OF INITIAL EVALUATION WHICH IS THE BASIS FOR THIS REPORT: / /

D 08

5a. AGENCY RESPONSIBLE FOR EVALUATION:
Put code in box ☐
Choose one

E = EPA
S = State
J = Joint
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O = Other
B = Contractor/State
X = Oversight

6. TYPE OF EVALUATION COVERED BY THIS REPORT: ☐
Put code in box
Choose one

1 = Evaluation Inspection
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7. DATE OF EVALUATION COVERED BY THIS REPORT (enter only if different from 5): / /

11 = Case Development

8. AREA AND CLASS OF VIOLATION (Enter 'X' in appropriate box if violations found. Enter '0' if no violations found in Area evaluated. Enter '2' to indicate area of interest.)

Class of Violation	Area of Violation						
	GWM	CL/PC	Fin.Res	Pt. B	Cmpl.Sch	Manifest	Other
I							
II							

9. ENFORCEMENT ACTIONS:

Class	Area of Violation	Type (use code)	Date Action Taken	Compliance Dates		Penalty		Resp.Ag. (use code)	Resp. Pers (3 initials)
				Scheduled	Actual	Assessed	Collected		

Codes for Types of Enforcement Actions:
03 = Warning Letter
05 = Administrative Order
10 = Informal
(See instructions for additional codes)

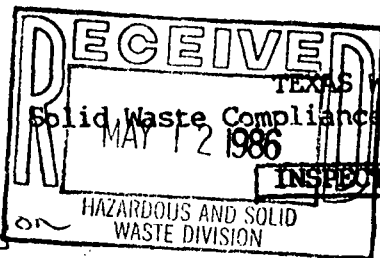
11 = Filed Civil Action
12 = Filed Criminal Action
15 = \$3008(h) Final Order
14 = Referral to EPA

Codes for Resp. Agency:
E = EPA
S = State
X = EPA oversight

9a. STATUS OF HANDLER WITH COMPLIANCE SCHEDULE OF ORDERS: Meeting compliance schedule Yes No Status Date / /

10. Comments: _____

(Limit each comment to 80 characters. Up to 99 comments are possible.)



C.O. Use Only

5-86

226

TWC Dist. S.E. RegionEPA ID No. TXD041067638COMMERCIAL WASTE Facility GOVT. Facility NAME OF COMPANY Librizol Corporation - Deer Park plantMAILING ADDRESS P.O. Box 158, Deer Park 77536 Tel. 713/479-2851SITE LOCATION Tidal Road, Deer Park Tel. COUNTY Harris TYPE OF INDUSTRY manufacture of lube oilGENERATOR CLASSIFICATION: Industrial ☒ Municipal additives

Part A Application submitted to the State ? Yes ☒ No To EPA ? Yes No
 Affidavit of Exclusion submitted to the State ? Yes No ☒
 Was a written exclusion granted by TWC? Yes No ☒ If yes, Date
 Will this facility require a permit ? Yes ☒ No

CURRENT WASTE MANAGEMENT (Haz. - "H", Class I NonHaz. - "NH", Class II - "II", Class III - "III")

Generator H, NH, II Treatment Storage H, NH, II Disposal Transporter HW Exemptions (check): 90-Day Storage Other *SQG : Total HW Generation Per Month: <100 kg. 100-1000 kg.

closing as H per Agreed Final Judgment

H W Facilities (circle appropriate codes): C (T) (SI) WP LT LF I TT TR WDW O

N H Facilities (circle appropriate codes): (C) (T) SI WP LT LF I TT TR WDW O

Anomalies in the above information will be addressed by: (a) Enforcement in progress ,
 (b) Central Office , (c) District Office , (d) Owner/Operator .

Type of Inspection (circle): (EV) EB EC CL GW SA CD FO OT FE SQ SW

Inspector's Name and Title Susan Ripley, Haz. & S.W. SpecialistInspection Participants Julius Rexer, Bob CoposDate(s) of Inspection March 21, 1986Approved: [Signature]
District ManagerSigned: Susan Ripley 4-30-86
Inspector Date

* SQG- Small quantity generator, <1000 kg. of hazardous waste per month.

TEXAS WATER COMMISSION
Solid Waste Inspection Report
CONTENTS SHEET

COMPANY NAME Lubrizol Corp.

- ☒ 1. Code Sheet (0814)
- ☒ 2. Inspection Cover Sheet
- ☐ 3. Special Inspection Cover Sheet (HB.2358)
- ☒ 4. Generators Checklist
- ☐ 5. Small Quantity Generator Checklist
- ☒ 6. General Facilities Checklist
- *7. Component Facility Checklists
 - ☒ A. Containers (C)
 - ☒ B. Tanks (T)
 - ☒ C. Surface Impoundments (SI)
 - ☐ D. Waste Piles (WP)
 - ☐ E. Land Treatment (LT)
 - ☐ F. Landfills (LF)
 - ☐ G. Incinerators (I)
 - ☐ H. Thermal Treatment (TT)
 - ☐ I. Chemical, Physical, or Biological Treatment (TR)
 - ☐ J. Other (O)
- ☒ 8. Closure and Post-Closure Checklist ☒ Closure-In-Progress Checklist
- ☒ 9. Groundwater Monitoring Checklist
- ☒ 10. Notice of Violation (NOV) Letter
- ☐ 11. Interoffice Memorandum (IOM)
- ☒ 12. Registration
- ☒ 13. Maps, Plans, Sketches
- ☐ 14. Photographs/Slides
- ☒ 15. Other (describe) process flow diagram

* If a required Checklist is omitted, explain: _____

GENERATORS CHECKLIST**Section A - Notification and Waste Determination (335.6, .62, .63)**

1. Has generator completed an appropriate hazardous waste determination for each solid waste produced?

YES ☒ NO ☐

2. Check the method used for determination :

- a. Listed as a hazardous waste in 40 CFR Part 261, Subpart D. ☒
 b. Process or materials knowledge.
 c. Tested for characteristics as identified in 40 CFR Part 261, Subpart C (If equivalent test method is used, attach a copy). ☒

NOTE: If a hazardous determination has not been made or appears to be incorrect, the inspector should obtain a sample of the waste for analysis and explain in comments.

3. Has the facility received an EPA ID number?

N/A ☐ YES ☒ NO ☐

4. Is notification of waste streams generated correct?

YES ☒ NO ☐

5. Do all waste management (TSD) methods in use agree with Registration?

YES ☐ NO ☒

6. Does this facility generate, treat, store, or dispose of PCB wastes? YES ☒ NO ☐

If yes, describe storage and disposition:

very infrequently

disposed of at Rollins

7. Does this facility generate **used oils** ?

YES ☒ NO ☐

If yes, describe storage and disposition:

stored in tank before sold ^{to recycler} or disposed of off-site

8. Does this facility generate **spent solvents** ?

YES ☒ NO ☐

If yes, describe storage and disposition:

stored in tank before sold to recycler or disposed of off-site

9. Does this facility utilize **sumps** in the management of hazardous waste? If yes, describe use:

YES ☐ NO ☒

*** An entry in this column indicates corrective action/response is needed

Section B - Special Conditions (335.75)

1. If generator has received from or transported to a foreign entity any hazardous waste, has the appropriate notice been filed with the EPA Regional Administrator? N/A ☒ YES ___ NO ___
2. Was the waste manifested and signed by the foreign consignee? N/A ☒ YES ___ NO ___
3. Has confirmation of waste transport out of the country been received by the generator? N/A ☒ YES ___ NO ___

Section C - Recordkeeping and Reporting (335.9, .10, .13, .70-71)

1. Does the generator maintain the following records and reports (if applicable) for the necessary three years?
 - a. Shipping Manifests N/A ___ YES ☒ NO ___
 - b. Monthly off-site shipment summaries N/A ___ YES ☒ NO ___
 - c. Monthly on-site land disposal summaries N/A ☒ YES ___ NO ___
 - d. Tests and analyses N/A ___ YES ☒ NO ___
 - e. Annual reports N/A ___ YES ☒ NO ___
2. Has generator submitted **exception reports** to TWC for any original (white) copies of manifests not received back? N/A ☒ YES ___ NO ___
3. Have any spills, unauthorized discharges or threats of such discharges occurred? YES ___ NO ☒
If yes, have they been reported? (335.4, .453) N/A ☒ YES ___ NO ___
Have they been remedied? (335.453) Explain. N/A ☒ YES ___ NO ___

+++ IF GENERATOR DISPOSES OF WASTES ON-SITE ONLY, WRITE N/A IN SECTION D+++

Section D - Pretransport and Manifest Requirements (335.61-68)

1. Identify primary off-site disposal facilities:

HESC (recycler), DSI, Empak, BFI
Hanesbrough Energy Systems of Crowley, La. takes an orga
liquid waste stream for recycling & sells as fuel to marine

2. Are off-site disposal facilities permitted vessels. If the waste > 40% water, N/A ___ YES ☒ NO ___
or operating under interim status standards? Lubrizol pays HESC. Otherwise, HESC pays.
3. Are TWC manifests properly completed? N/A ___ YES ☒ NO ___

The water is separated out at HES & sent back to Empak for disposal.

+++ STOP & SIGN HERE IF FACILITY QUALIFIES AS A SMALL QUANTITY GENERATOR +++

Signed: _____

Sludges go to CWM for disposal.
All shipments are manifested.

Section D - (Continued)

4. Do containers used to hold waste(s) meet DOT packaging requirements (49 CFR Parts 173, 178, 179) before being offered for transport (if circumstances observed)? N/A ☒ YES ___ NO ___
5. Does generator label and mark each package in accordance with 49 CFR Part 172 (if circumstances observed)? N/A ☒ YES ___ NO ___
6. Is each container of 110 gallons or less marked with the required hazardous waste warning label? N/A ☒ YES ___ NO ___
7. Does generator placard off-site waste shipments in accordance with DOT regulations (49 CFR Part 172, Subpart F)? (if circumstances observed) N/A ☒ YES ___ NO ___

Section E - Accumulation Time Exemption (335.69)

Note: A facility may accumulate and store hazardous wastes in containers or tanks for up to 90 days without a permit.

1. Is the beginning date of Accumulation Time clearly indicated on each container? N/A ☒ YES ___ NO ___
2. Is each container or tank clearly labeled or marked with the words "Hazardous Waste"? N/A ☒ YES ___ NO ___

Note: Attach a Container Storage Area Checklist for each container storage area.

Note: Attach a Tanks Checklist for each tank or each group of similar tanks.

Note: If this is a T/S/D Facility, proceed to General Facilities Checklist.

GENERAL FACILITIES CHECKLISTSection A - General Site Information

1. Are any solid waste facilities located in the 100-year floodplain? YES ___ NO ☒ *
If yes, explain.
2. Describe land use within one mile industrial
- see comments* 3. Are there any closed or abandoned solid waste facilities? YES ___ NO ☒
If yes, explain. closure in progress on #1 lift station, filter cake & Equalization Basin & tanks, shell
4. Has proof of deed recordation of all on-site solid waste disposal facilities been provided to the agency? N/A ☒ YES ___ NO ___
If no, explain.
5. Are all non-RCRA solid waste facilities compliant with the general prohibitions contained in TAC 335.4? N/A ___ YES ☒ NO ___
If no, explain.
6. An up-to-date Plant Map showing site orientation, waste management facilities, and major topographic features should be attached. Each facility checklist should have a Facility Map or Sketch attached.

+++ Note: For all non-RCRA facilities, do not complete the remainder of this General Facilities Checklist. Proceed to the individual facility checklists. +++

Section B - Personnel Training (335.117)

1. Owner/operator maintains proper personnel training records at the facility. N/A ___ YES ☒ NO ___
2. Personnel training records include:
- a. Job title and written job description of each position. N/A ___ YES ☒ NO ___
- b. Description of type and amount of training. N/A ___ YES ☒ NO ___
- c. Records of training given to facility personnel. some not up-to-date N/A ___ YES ☒ NO ☒
3. Personnel training records are maintained for the appropriate length of time. N/A ___ YES ☒ NO ___
4. Training program is adequate for response to emergencies. N/A ___ YES ☒ NO ___

*** An entry in this column indicates corrective action/response is needed.

Section C - Preparedness and Prevention (335.131-137)

1. Describe any evidence of fire, explosion, or contamination of the environment in the comments sheet.
2. Facility is equipped with:
 - a. Internal communication or alarm system within easy access. N/A ☐ YES ☒ NO
 - b. Telephone or two-way radio to call emergency response personnel. N/A ☐ YES ☒ NO
 - c. Portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment are tested regularly to assure proper operation. N/A ☐ YES ☒ NO
 - d. Available water supply volume and pressure are adequate for hoses, sprinklers or water spray system. N/A ☐ YES ☒ NO
3. Aisle space is sufficient to allow unobstructed movement of personnel and equipment. N/A ☐ YES ☒ NO
4. Owner/operator has attempted to make arrangements with the local response authorities to familiarize them with the layout of the facility, properties of hazardous wastes handled and associated hazards, work locations of facility personnel, entrances to facility roads and possible evacuation routes. N/A ☐ YES ☒ NO
5. In the event that more than one law enforcement or fire department might respond, a primary authority has been designated. N/A ☐ YES ☒ NO
6. Owner/operator has attempted to reach agreements with State emergency response teams, emergency response contractors and equipment suppliers. N/A ☐ YES ☒ NO
7. Owner/operator has attempted to make arrangements with local hospitals to familiarize them with the properties of the hazardous wastes handled and the types of injuries that could result from fires, explosions or releases from the facility. N/A ☐ YES ☒ NO
8. State or local authorities have entered into the necessary arrangements. N/A ☒ YES ☐ NO

Section D - Contingency Plan and Emergency Procedures (335.151 - .157)

1. A contingency plan is maintained at the facility. N/A ☐ YES ☒ NO
2. The contingency plan is:
 - a. a revised SPCC plan ☐
 - b. a separate document ☒
 - c. adequate to meet emergency procedures requirements. N/A ☐ YES ☒ NO
3. Emergency coordinator is on site or on call at all times. N/A ☐ YES ☒ NO

*** STOP HERE IF FACILITY ACCUMULATES WASTE ON SITE FOR LESS THAN 90 DAYS ***

Section E - Waste Analysis (335.114)

1. Facility has a waste analysis plan. N/A ☐ YES ☒ NO
 2. Waste analysis plan is maintained at the facility. N/A ☐ YES ☒ NO
 3. Waste analysis plan includes the following:
 - a. Parameters for which each waste will be analyzed. N/A ☐ YES ☒ NO
 - b. Test methods used to test for these parameters. N/A ☐ YES ☒ NO
 - c. Sampling method used to obtain sample. N/A ☐ YES ☒ NO
 - d. Frequency with which the initial analysis will be reviewed or repeated. N/A ☐ YES ☒ NO
- Note:** Frequency includes the requirement to repeat analysis whenever waste stream or process is changed.
- e. Waste analyses that generators have agreed to provide. N/A ☒ YES ☐ NO
 - f. For off-site disposal facilities, the procedures which are used to inspect and analyze each movement of hazardous waste, including:
 - 1) Procedures to be used to determine the identity of each movement of waste. N/A ☒ YES ☐ NO
 - 2) Sampling method to be used to obtain a representative sample of the waste to be identified. N/A ☒ YES ☐ NO

Section F - Security (335.115)

1. The facility provides adequate security. N/A ☐ YES ☒ NO
 - a. ☒ 24-hour surveillance system, OR
 - b. ☒ Artificial and/or natural barrier around facility, AND
Describe: fence
 - c. ☒ Means to control access through entrances.
Describe: gates either manned or locked
2. Facility has a sign with the legend "Danger - Unauthorized Personnel Keep Out". N/A ☐ YES ☒ NO

Section G - General Inspection Requirements (335.116)

- | | |
|--|--|
| 1. Facility has a written inspection plan and schedule. | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| 2. Inspection plan is maintained at the facility. | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| 3. Plan and schedule provide for the inspection of the following: | |
| a. Monitoring equipment | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Safety and emergency equipment | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Security devices | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| d. Operating and structural equipment. | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| 4. Schedule or plan identifies the types of problems to be looked for during the inspection. | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| a. Malfunction and deterioration | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Operator error | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Discharge or threat of discharge | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| 5. The owner/operator maintains an inspection log which includes: | |
| a. Date and time of inspection | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| b. Name of inspector | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| c. Notation of observations | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |
| d. Date and nature of repairs and remedial action. | N/A <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> |
| 6. Malfunctions or other deficiencies noted in the inspection log have been rectified. | N/A <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO <input type="checkbox"/> |
| 7. Inspection log records are maintained for three years. | N/A <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO <input type="checkbox"/> |

Section H - Requirements for Ignitable, Reactive or Incompatible Wastes (335.118)

1. Owner/operator is familiar with the proper separation and safeguards needed to prevent ignition or reaction of wastes. N/A ☐ YES ☒ NO ☐
 - a. Use comments sheet to describe separation and confinement procedures.
 - b. Use comments sheet to describe any potential sources of ignition or reaction.
2. Smoking and open flame are confined to specifically designated smoking areas. N/A ☐ YES ☒ NO ☐
3. "No Smoking" signs are posted in hazardous areas. N/A ☐ YES ☒ NO ☐

Section I - Manifest System, Recordkeeping and Reporting (335.171 - .177)

1. Owner/operator complies with the manifest requirements. N/A ☐ YES ☒ NO ☐

Note: If #1 is not applicable (N/A), go to #6.
2. Waste received from a rail or water (bulk shipment) transporter are accompanied by a properly executed shipping paper. N/A ☒ YES ☐ NO ☐
3. All shipments of wastes received have been consistent with the manifests. N/A ☒ YES ☐ NO ☐
4. Unmanifested wastes are reported to the Executive Director. N/A ☒ YES ☐ NO ☐
5. Discrepancies have been reconciled with the generator and transporter. N/A ☒ YES ☐ NO ☐
6. Owner/operator keeps a written operating record at the facility. N/A ☐ YES ☒ NO ☐
7. Operating record reflects the following:
 - a. Description and quantity of each hazardous waste received and methods and date of treatment/storage/disposal at the facility. N/A ☒ YES ☐ NO ☐
 - b. Location and quantity of each hazardous waste within the facility. N/A ☐ YES ☒ NO ☐
 - c. Records and results of waste analyses and trial tests. N/A ☐ YES ☒ NO ☐
 - d. Summary reports of all incidents that require implementation of the emergency contingency plan. N/A ☒ YES ☐ NO ☐
 - e. Closure cost estimates for all facilities. N/A ☐ YES ☒ NO ☐
 - f. Post-closure cost estimates for all disposal facilities. N/A ☒ YES ☐ NO ☐

Section J - Financial Assurance (335.233)

*

1. Preinspection call to Central Office confirms that facility has submitted current financial assurance documentation. N/A ☐ YES ☒ NO
2. If yes, indicate the documents submitted and their respective values:
- ☒ Sudden Liability - Amount: \$ 1 m per occurrence, \$ 2 m annual.
- ☒ Non-sudden Liability - Amount: \$ 3 m per occurrence, \$ 6 m annual.
- ☒ Closure Assurance - Amount: \$ 727,998
- ☐ Post Closure Assurance - Amount: \$ _____
- ☐ Corrective Action - Amount: \$ _____
3. Financial Assurance Officer reports that documentation is adequate. N/A ☐ YES ☒ NO

finan. test
- clos. \$727,998
- liability

If no, describe deficiencies:

COMMENTS SHEET

Section A-3 / Closure plans have been submitted for the No. 1 Lift Station, Equalization Basin, tank car shed (all Haz.), and the NH filter cake pit. None have been completed as yet.

Section /

Section /

Section /

Solid Waste Inspection Report
(TAC 335.211-220)
CLOSURE & POST-CLOSURE CHECKLIST

Section A - CLOSURE PLAN

1. Circle hazardous waste facilities subject to RCRA CLOSURE.

CLOSURE: C **(T)** SI WP LT LP I TT TR WDW O2. Does the facility have a written **closure plan**? YES ☒ NO ☐ ***3. Does the plan address all hazardous waste facilities? YES ☒ NO ☐

4. Does the closure plan include:

a. A description of how and when the facility will be: *16 tanks sk
(10 may be in-process tanks
→ see attached flow diagram)
GA has not made determination*Partially Closed-
Finally Closed-N/A ☐ YES ☒ NO ☐
YES ☒ NO ☐b. An up-to-date estimate of the **maximum inventory** of wastes in storage and treatment at any time during the life of the facility?YES ☒ NO ☐c. An estimate of the expected **year of closure**?YES ☒ NO ☐Year: 1-1-20195. Does the plan include a **schedule** for final closure:
Does the schedule include:YES ☒ NO ☐

a. Time estimates for each phase of closure for each area?

YES ☒ NO ☐

b. Total time estimate for closure?

YES ☒ NO ☐6. Are the following **Steps to Close** included in the plan?

- a. Removal of wastes
- b. Treatment of wastes
- c. Waste disposal
- d. Cover
- e. Decontamination of equipment & structures
- f. Closure certification

N/A ☐ YES ☒ NO ☐
 N/A ☒ YES ☐ NO ☐
 N/A ☐ YES ☒ NO ☐
 N/A ☒ YES ☐ NO ☐
 YES ☒ NO ☐
 YES ☒ NO ☐

7. Has plan been **amended as necessary** to reflect changes in facility operations or design?N/A ☒ YES ☐ NO ☐8. Using a comments sheet, give a brief summary of how empty tanks, high press each RCRA facility component will be closed: wash, dismantle

*Closure plan does not include equal. basin or No. 1 lift station
→ under separate closure plan & cost estimate*

*** An entry in this column indicates corrective action/response is needed.

Section B - POST-CLOSURE PLAN

Circle hazardous waste facilities subject to RCRA Post-Closure.

POST-CLOSURE: SI WP LT LP O

1. Does the facility have a **written post-closure plan**? N/A ☒ YES ___ NO ___
2. Does the plan address all RCRA land disposal facilities? YES ___ NO ___
3. Does the plan provide for **30 years** of post-closure care? YES ___ NO ___
4. Does the plan include:
- a. A description of planned **groundwater monitoring activities and frequencies**? YES ___ NO ___
- b. A description of planned **maintenance activities and frequencies** to ensure the following:
- (1) Integrity of cap, final cover, or other containment YES ___ NO ___
- (2) Proper functioning of groundwater monitoring equipment YES ___ NO ___
- (3) Proper functioning of leachate collection equipment N/A ___ YES ___ NO ___
- (4) Proper functioning of gas collection equipment N/A ___ YES ___ NO ___
- c. Name, address and phone number of facility **contact person** for the post-closure period? YES ___ NO ___
- d. Requirement for notice to local **land authority**? YES ___ NO ___
- e. Requirement for notice in **deed to property** of hazardous waste disposal and future land use restrictions? YES ___ NO ___
5. Has the plan been **amended** during the operating life of the facility to reflect changes in operation or design? YES ___ NO ___
6. Using a comments sheet, give a brief summary of planned post-closure activities:

equal. basin \$428,900 } separate
No. 1 lift station \$50,705 } closures

YES ☒ NO

\$ 248,393 → 116 tanks

- YES ☒ NO

N/A ☒ YES NO

\$ _____

- N/A ✓ YES NO

- N/A ☒ YES NO

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TWC Solid Waste Inspection Report
(TAC 335.191-195)GROUND WATER MONITORING CHECKLIST

1. GROUND WATER MONITORING STATUS:

Complete the table for each Waste Management Area (WMA):

WMA	Description	Activity Status	Monitoring Status	Number of Wells
1	Equalization Basin	inactive	Corrective action	U 1 D 3
2	No. 1 Lift Station	inactive	assessment	U 1 D 3
3				U D
4				U D

Give date of approval for waivers, alternate plan, or assessment plan, as applicable: assessment plan No. 1 Lift Station → 2-13-86compliance plan Equal. Basin → 2-5-86

2. Provide a diagram locating each monitoring well and waste site(s). List depths, diameter and completion data on each well not included on the previous inspection. see CMS submitter 4-18-86

3. Has the following been installed in the uppermost aquifer around each Waste Management Area(s):

a. At least one hydraulically upgradient well?

YES ☒ NO ☐ ***

b. At least three hydraulically downgradient wells?

YES ☒ NO ☐c. Indicate WMA(s) that ~~that~~ are not compliant: _____

d. Describe possible problems on Comments Sheet.

4. If the WMA includes multiple waste management facilities, is each facility adequately monitored?

N/A ☒ YES ☐ NO ☐

5. Does the facility have a **GW Sampling and Analysis Plan**?

YES ☒ NO ☐

Does it adequately address:

a. Sample collection procedures

YES ☒ NO ☐

b. Sample preservation and shipment

YES ☒ NO ☐

c. Analytical procedures

YES ☒ NO ☐

d. Chain of custody procedures

YES ☒ NO ☐

6. Does the facility have an adequate **GW Quality Assessment Plan Outline**?

YES ☒ NO ☐

7. If the company is performing an alternate groundwater monitoring program or a partial waiver monitoring program, is an approved Sampling and Analysis Plan followed?

N/A ☐ YES ☒ NO ☐

NOTE: Complete the "GW Sampling Procedures Checklist", when observing well sampling procedures or co-sampling monitor wells at the facility.

*** An entry in this column indicates corrective action/response is needed.

8. Have records been kept of:

- ***
- a. Analyses for ground water parameters? YES ☒ NO ☐
- b. Calculations of means and variances? YES ☒ NO ☐
- c. Water surface elevations taken at each well sampling event? YES ☒ NO ☐
- d. Calculations of significant differences? N/A ☐ YES ☒ NO ☐
- e. Analyses of duplicate samples for contamination confirmation? N/A ☐ YES ☒ NO ☐
- f. Analyses of samples taken as a result of implementing the Ground Water Quality Assessment Plan? N/A ☐ YES ☒ NO ☐
- g. Results of Ground Water Quality Assessment Plan? N/A ☐ YES ☒ NO ☐
- Equal. Basin
- (1). Rates of Migration? YES ☒ NO ☐
- (2). Concentration of hazardous waste and/or constituents thereof? YES ☒ NO ☐
- (3). Analyses of quarterly ground water samples? YES ☒ NO ☐
- h. Copies of **annual reports** of the groundwater monitoring program? YES ☒ NO ☐

9. Are self-reporting data being submitted on the appropriate TWC forms?

YES ☒ NO ☐

NOTE: Complete the remaining checklists as applicable to each Waste Management Area

Comments: Neither WMA underwent 1st yr. monitoring. The equalization basin has completed an assessment & confirmed contamination. The No. 1 Lift Station is undergoing assessment. GW monitoring for both facilities was required in the Agreed Final Judgment of 1-6-86.

Waste Management Area(s) _____

- YES NO

- YES _____ NO _____

- YES _____ NO _____

-
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01/86

GW SEMI-ANNUAL DETECTION MONITORING

N/A

Waste Management Area(s) _____

1. Was the **first year** background sampling program adequately completed? YES ___ NO ___
2. Are wells sampled and analyzed **annually** for ground water quality parameters? YES ___ NO ___
3. a. Are wells sampled and analyzed **semi-annually** for contamination indicator parameters? YES ___ NO ___
- b. Are 4 replicate measurements of indicator parameters made for each upgradient and downgradient well sample? YES ___ NO ___
4. Are ground water **surface elevations** determined at each well for each sampling event? YES ___ NO ___
5. Were ground water surface elevations evaluated **annually** to determine whether monitoring wells are properly placed? YES ___ NO ___
6. Were **changes** to the monitoring system necessary to maintain compliance with 335.192(a)? YES ___ NO ___
If yes, describe in comments. _____
7. Are statistical comparisons, using the Student's t-test at the 0.01 level of significance, performed? YES ___ NO ___
- a. Between the initial background mean and mean of current **upgradient** well analyses for each contamination indicator parameter? YES ___ NO ___
- b. Between the initial background mean and mean of current **downgradient** well analyses for each contamination indicator parameter? YES ___ NO ___
8. If there is more than one upgradient well, are all the background data combined resulting in one background mean with variance for each contamination parameter **or** is each upgradient well mean and variance compared separately with downgradient well analyses?
Circle the appropriate phrase.
9. Have significant increases (or pH decreases) in contamination indicator parameters been found in the:
- a. Upgradient wells? YES ___ NO ___
- b. If yes, did the company report the upgradient well change on the annual report form? YES ___ NO ___
- c. Downgradient wells? YES ___ NO ___

*** An entry in this column indicates corrective action/response is needed.

10. If significant increases (or pH decreases) in downgradient wells were detected, did the company:

a. Resample the "affected" well(s), split the sample in two, and re-analyze for the parameter(s) that showed significant difference?

N/A ___ YES ___ NO ___

b. Confirm the significant difference?

N/A ___ YES ___ NO ___

c. Notify the Executive Director within 7 days of confirmation?

N/A ___ YES ___ NO ___

d. Submit a certified Ground Water Quality Assessment Plan within 15 days of notifying the Executive Director?

N/A ___ YES ___ NO ___

11. Has the facility resumed detection monitoring at this WMA after determining in an assessment that no hazardous waste or constituents were detected in ground water?

N/A ___ YES ___ NO ___

b. If yes, when was detection monitoring resumed? _____

NOTE: Complete "GW Assessment Monitoring Checklist" if detection monitoring was resumed since the last inspection.

12. Has the facility modified the t-test procedure to reduce the occurrence of "false positive" statistical indications?

YES ___ NO ___

b. Describe changes in comments or include attachments.

c. Date of TWC approval _____

13. Has the facility substituted other parameters in place of pH, conductivity, TOC and/or TOX?

YES ___ NO ___

b. List the parameters: _____

c. Date of TWC approval _____

Comments: _____

GW ASSESSMENT MONITORINGWaste Management Area(s) No. 1 Lift Station

1. Has the facility started to implement an approved Lift Station Ground Water Quality Assessment Plan? *******
 Give date plan was started 3-17-86 N/A YES ☒ NO ☐
→ monitor wells installed

2. If the plan is in progress, give projected completion date 5-21-86 and describe actions to date: wells installed; wells sampled 3-21-86

- a. Is the facility on schedule? N/A YES ☒ NO ☐

3. If the plan has been completed, give date of Ground Water Quality Assessment report: _____

4. Do results indicate that hazardous waste or constituents have been detected? unknown → results not in
 N/A YES ☐ NO ☐

- a. If yes, has a Quarterly Assessment Monitoring Program been implemented? YES ☐ NO ☐

- b. If no, was detection monitoring reinstated? YES ☐ NO ☐

- c. If the facility has not responded appropriately, explain why in comments.

NOTE: If answer to 4b is yes, Stop Here.

5. List the hazardous waste constituents detected: unknown → sample results have not been received

6. Has the facility Sampling and Analysis Plan been revised to include these parameters? N/A ☒ YES ☐ NO ☐

7. Quarterly, since completion of the assessment, has the facility continued to:

- a. Sample and analyze for hazardous waste or constituents? N/A ☒ YES ☐ NO ☐

- b. Determine rate and extent of migration of hazardous waste or constituents? N/A ☒ YES ☐ NO ☐

******* An entry in this column indicates corrective action/response is needed.

8. Yearly, has the facility reported the results of the assessment program (with annual waste report), to include the calculated (or measured) rate of migration of hazardous waste or constituents in ground water during the reporting period? ***
N/A ☒ YES ___ NO ___
9. If t-test failures have occurred at the WMA during its post-closure care period, has facility complied with:
- a. Retesting to confirm t-test failures? N/A ☒ YES ___ NO ___
 - b. Notifying TWC within 7 days of confirmation? N/A ☒ YES ___ NO ___
 - c. Submittal of approved plan? N/A ☒ YES ___ NO ___
 - d. Completion of approved plan? N/A ☒ YES ___ NO ___
10. Is the WMA a "regulated unit"* subject to 40 CFR 264 Subpart F compliance monitoring requirements? N/A ___ YES ☒ NO ___
- a. If yes, has the assessment detected hazardous waste or constituents in ground water at WMA? assessment on going
N/A ___ YES ___ NO ___
 - b. If yes has the facility sampled and analyzed for all hazardous waste constituents (Appendix VIII, 40 CFR 261) to characterize the plume in accordance with 40 CFR 270.14(c) (4)? assessment on-going
N/A ___ YES ___ NO ___
 - c. If no, report this information to the TWC Groundwater Enforcement Unit in the Central Office.

Comments: sample analysis for assessment includes:

pH

TOC

spec. conductance

phenol

chlorophenol

para cresol

meta cresol

2,4 dimethylphenol

naphthalene

barium

* Land Disposal facility that received hazardous waste after July 26, 1982.

*** An entry in this column indicates corrective action/response is needed.

41/85

8. Yearly, has the facility reported the results of the assessment program (with annual waste report), to include the calculated (or measured) rate of migration of hazardous waste or constituents in ground water during the reporting period? N/A ☐ YES ☒ NO ☐ ***
9. If t-test failures have occurred at the WMA during its post-closure care period, has facility complied with:
- a. Retesting to confirm t-test failures? N/A ☒ YES ☐ NO ☐
 - b. Notifying TWC within 7 days of confirmation? N/A ☒ YES ☐ NO ☐
 - c. Submittal of approved plan? N/A ☒ YES ☐ NO ☐
 - d. Completion of approved plan? N/A ☒ YES ☐ NO ☐
10. Does the WMA contain a "regulated unit"* subject to 40 CFR 264 Subpart F compliance monitoring requirements? N/A ☐ YES ☒ NO ☐
- a. If yes, has the assessment detected hazardous waste or constituents in ground water at this WMA? N/A ☐ YES ☒ NO ☐
 - b. If yes has the facility sampled and analyzed for all hazardous waste constituents (Appendix VIII, 40 CFR 261) in progress to characterize the plume in accordance with 40 CFR 270.14(c) (4)? N/A ☐ YES ☐ NO ☐
 - c. If no, report this information to the TWC Groundwater Enforcement Unit in the Central Office.

Comments: _____

* Land Disposal facility that received hazardous waste after July 26, 1982.

*** An entry in this column indicates corrective action/response is needed.

TWC Solid Waste Inspection Report
(TAC 335.261-267)
TANKS CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 14,15

Tanks S-42, CA-1

Class of Waste (H)

Note: TAC Subchapters E through V do not apply to Tanks exempted by the Elementary Neutralization and Wastewater Treatment Unit exclusions.

Use of Tank (check): Treatment ☐ Storage ☒

Type of Waste: scrubber water

Type of Tank (check): Elevated ☐ On-ground ☒ Below-grade ☐ Underground ☐

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: fiberglass

Section A - General Operating Requirements (335.262)

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO ☒ YES ☐

2. Is the Tank uncovered? YES ☐ NO ☒
If yes:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ☐ YES ☐ NO ☐

Describe: _____

3. Is the Tank continuous feed? YES ☐ NO ☒
If yes:

Is there a feed cutoff or bypass to standby Tank? N/A ☒ YES ☐ NO ☐

Section B - Waste Analyses (335.263)

1. Is the Tank used to treat or store different wastes? YES ☐ NO ☒

If yes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or

Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ☒ YES ☐ NO ☐

*b. Are records available of these
wastes analyses in the operating record?

N/A ☒ YES ☐ NO ☐

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates corrective action/response is needed.

Section C - Tank Inspections (335.264)

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass and/or drainage system)? N/A ☐ YES ☒ NO ☐
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A ☐ YES ☒ NO ☐
- c. Data gathered from monitoring equipment? N/A ☐ YES ☒ NO ☐
- d. Level of waste in each uncovered tank? N/A ☒ YES ☐ NO ☐

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? YES ☒ NO ☐
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES ☒ NO ☐

*3. Is a written **inspection schedule** kept at the site (335.116)? N/A ☐ YES ☒ NO ☐

*4. Are adequate Tank **inspection logs** maintained for the necessary three years (335.116)? N/A ☐ YES ☒ NO ☐

Section D - Special Requirements (335.266-267)

1. Are **ignitable** and **reactive** wastes handled in accordance with the special requirements of TAC 335.266:

- a. Rendered non-ignitable or non-reactive or Protected from sources of ignition or reaction? (N/A if the Tank is used solely for emergencies) N/A ☒ YES ☐ NO ☐
- b. Compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A ☒ YES ☐ NO ☐

2. Is the Tank used to hold **incompatible** wastes? YES ☐ NO ☒

If yes, is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A ☒ YES ☐ NO ☐

3. Describe Tank size and capacity. Indicate location and designation of Tank on Plant Map.

T-42 → 10,000 gal.; high concrete dike around tank
 CA-1 → 18,000 gal.

TWC Solid Waste Inspection Report
(TAC 335.261-267)

TANKS CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 47

Tanks WO-1, WO-6
(T-23X)

Class of Waste (H)

Note: TAC Subchapters E through V do not apply to Tanks exempted by the Elementary Neutralization and Wastewater Treatment Unit exclusions.

Use of Tank (check): Treatment Storage ✓

Type of Waste: organic liquid & water

Type of Tank (check): Elevated On-ground ✓ Below-grade Underground

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: carbon steel

Section A - General Operating Requirements (335.262)

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO ✓ YES

2. Is the Tank uncovered? YES NO ✓
If yes:

Is there 2 ft. of freeboard, an adequate containment dike,
a drainage control system, or a diversion structure? N/A ✓ YES NO

Describe:

3. Is the Tank continuous feed? YES NO ✓
If yes:

Is there a feed cutoff or bypass to standby Tank? N/A ✓ YES NO

Section B - Waste Analyses (335.263)

1. Is the Tank used to treat or store different wastes? YES NO ✓

If yes:

*a. Are waste analyses and trial treatment
or storage tests done on these different wastes

or
Is there written, documented information
on similar treatment or storage of similar wastes?

N/A ✓ YES NO

*b. Are records available of these
wastes analyses in the operating record?

N/A ✓ YES NO

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates corrective action/response is needed.

Section C - Tank Inspections (335.264)

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass and/or drainage system)? N/A YES ✓ NO
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A YES ✓ NO
- c. Data gathered from monitoring equipment? N/A YES ✓ NO
- d. Level of waste in each uncovered tank? N/A ✓ YES NO

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? YES ✓ NO
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES ✓ NO

*3. Is a written inspection schedule kept at the site (335.116)? N/A YES ✓ NO

*4. Are adequate Tank inspection logs maintained for the necessary three years (335.116)? N/A YES ✓ NO

Section D - Special Requirements (335.266-267)

1. Are ignitable and reactive wastes handled in accordance with the special requirements of TAC 335.266:

- a. Rendered non-ignitable or non-reactive
Protected from sources of ignition or reaction?
(N/A if the Tank is used solely for emergencies) N/A YES ✓ NO WO-1
- b. Compliant with the National Fire Protection Association buffer zone requirements for covered tanks? it is NH WO-6 used for emergency containment for B-32; normal N/A YES ✓ NO

2. Is the Tank used to hold incompatible wastes? YES NO ✓

If yes, is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A ✓ YES NO

3. Describe Tank size and capacity. Indicate location and designation of Tank on Plant Map.

(emergency containment for H)
WO-6 → 8400 gal.; associated concrete sump to decant NH₄ water - process sewer
WO-1 → less than 90-day storage; no diking → drains to process sewer

Note: Tank T-23X stores sodium aluminate waste (H) which is reused as a raw material for ww neutralization.

TWC Solid Waste Inspection Report
(TAC 335.261-267)

TWC Reg. No. 30324

Reg. Facility No. 18

TANKS CHECKLIST

Tanks B-32 & lab tank
(not on NOR)

Class of Waste (H)

Note: TAC Subchapters E through V do not apply to Tanks exempted by the Elementary Neutralization and Wastewater Treatment Unit exclusions.

Use of Tank (check): Treatment Storage ✓

Type of Waste: solvents, lab wastes

Type of Tank (check): Elevated On-ground ✓ Below-grade Underground

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: carbon steel

Section A - General Operating Requirements (335.262)

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure? NO YES ✓

2. Is the Tank uncovered? YES NO ✓

If yes:

Is there 2 ft. of freeboard, an adequate containment dike, a drainage control system, or a diversion structure? N/A ✓ YES NO

Describe:

3. Is the Tank continuous feed? YES ✓ NO

If yes:

Is there a feed cutoff or bypass to standby Tank? N/A YES ✓ NO

Tank WO-b
→ standby tank

Section B - Waste Analyses (335.263)

1. Is the Tank used to treat or store different wastes? YES ✓ NO

If yes:

*a. Are waste analyses and trial treatment or storage tests done on these different wastes

or

Is there written, documented information on similar treatment or storage of similar wastes?

N/A YES ✓ NO

*b. Are records available of these wastes analyses in the operating record?

N/A YES ✓ NO

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates corrective action/response is needed.

Section C - Tank Inspections (335.264)

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass and/or drainage system)? N/A ☐ YES ☒ NO ☐
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A ☐ YES ☒ NO ☐
- c. Data gathered from monitoring equipment? N/A ☐ YES ☒ NO ☐
- d. Level of waste in each uncovered tank? N/A ☒ YES ☐ NO ☐

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? YES ☒ NO ☐
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES ☒ NO ☐

*3. Is a written **inspection schedule** kept at the site (335.116)?

N/A ☐ YES ☒ NO ☐

*4. Are adequate Tank **inspection logs** maintained for the necessary three years (335.116)?

N/A ☐ YES ☒ NO ☐

Section D - Special Requirements (335.266-267)

1. Are **ignitable** and **reactive** wastes handled in accordance with the special requirements of TAC 335.266:

a. Rendered non-ignitable or non-reactive

or
Protected from sources of ignition or reaction?
(N/A if the Tank is used solely for emergencies)

N/A ☒ YES ☐ NO ☐

b. Compliant with the National Fire Protection Association buffer zone requirements for covered tanks?

N/A ☒ YES ☐ NO ☐

2. Is the Tank used to hold **incompatible** wastes? YES ☐ NO ☒

If yes, is the Tank washed prior to placement of wastes incompatible with previously stored wastes?

N/A ☒ YES ☐ NO ☐

3. Describe Tank size and capacity. Indicate location and designation of Tank on Plant Map.

B-32 → 1510 gal.; tank corroded, no dikes → spills would
(90-day) drain to process sewer
lab tank → ~500 gal.; collects leftover
samples; then a vacuum truck collects
waste & takes to B-32 for storage until
sent for recycling

TWC Solid Waste Inspection Report
(TAC 335.261-267)

TANKS CHECKLIST

TWC Reg. No. 30324

Reg. Facility No. 3, 5, 6, 7, 8, 10, 11, 12, 16, 25, 26, 27

Class of Waste (NH, II)

C-61, WO-3, WO-5, WO-6, T-19P, T-19W, T-19X, T-19Y, T-20X, H-6, RA-3, WO-4, H-73

Note: TAC Subchapters E through V do not apply to Tanks exempted by the Elementary Neutralization and Wastewater Treatment Unit exclusions.

Use of Tank (check): Treatment Storage ✓

Type of Waste: organic liquid & water (INH) & clarifier sludge (#003)

Type of Tank (check): Elevated On-ground ✓ Below-grade Underground

NOTE: Underground storage tanks are generally not being granted permit exemptions.

Describe Tank construction: all carbon steel except WO-5, WO-6, & T-19W which are fiberglass

Section A - General Operating Requirements (335.262)

1. Is there evidence of ruptures, leaks, corrosion, or Tank failure?

NO YES ✓

2. Is the Tank uncovered?

YES NO ✓

If yes:

Is there 2 ft. of freeboard, an adequate containment dike, a drainage control system, or a diversion structure?

leak at H-6 =
oily material
dripping down
side of tank
N/A ✓ YES NO

Describe:

3. Is the Tank continuous feed?

YES NO ✓

If yes:

Is there a feed cutoff or bypass to standby Tank?

N/A ✓ YES NO

Section B - Waste Analyses (335.263)

N/A

1. Is the Tank used to treat or store different wastes?

YES NO

If yes:

*a. Are waste analyses and trial treatment or storage tests done on these different wastes

or

Is there written, documented information on similar treatment or storage of similar wastes?

N/A YES NO

*b. Are records available of these wastes analyses in the operating record?

N/A YES NO

* Not applicable to Tanks under the 90-Day Storage Exemption.

*** An entry in this column indicates corrective action/response is needed.

Section C - Tank Inspections (335.264)

N/A

1. Are the following items (if present) inspected at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass and/or drainage system)? N/A ___ YES ___ NO ___
- b. Monitoring equipment (pressure & temperature gauges, etc.)? N/A ___ YES ___ NO ___
- c. Data gathered from monitoring equipment? N/A ___ YES ___ NO ___
- d. Level of waste in each uncovered tank? N/A ___ YES ___ NO ___

2. Are the following items inspected at least weekly:

- a. Construction materials of tank for corrosion and leaks? YES ___ NO ___
- b. Construction materials of discharge confinement structures (dikes) for erosion or leaks? YES ___ NO ___

*3. Is a written **inspection schedule** kept at the site (335.116)? N/A ___ YES ___ NO ___

*4. Are adequate Tank **inspection logs** maintained for the necessary three years (335.116)? N/A ___ YES ___ NO ___

Section D - Special Requirements (335.266-267)

N/A

1. Are **ignitable** and **reactive** wastes handled in accordance with the special requirements of TAC 335.266:

- a. Rendered non-ignitable or non-reactive
or
Protected from sources of ignition or reaction?
(N/A if the Tank is used solely for emergencies) N/A ___ YES ___ NO ___
- b. Compliant with the National Fire Protection Association buffer zone requirements for covered tanks? N/A ___ YES ___ NO ___

2. Is the Tank used to hold **incompatible** wastes? YES ___ NO ___

If yes, is the Tank washed prior to placement of wastes incompatible with previously stored wastes? N/A ___ YES ___ NO ___

3. Describe Tank size and capacity. Indicate location and designation of Tank on Plant Map.

see attached map

TWC Solid Waste Inspection Report

TWC Reg. No. 30324Reg. Facility NO. Not on
NORSurface Impoundment ChecklistEqualization Basin - undergoing closure
Class of Waste (H, NH)
low pHUse of Impoundment (check): Treatment Storage ✓ Disposal Type of Waste: process wastewaterType of Liner: 3' recompacted clayIs there a Leachate Collection and removal system? YES NO ✓Does owner/operator intend to "clean close" the impoundment at Closure? YES ✓ NO
(i.e., remove all hazardous liquids and sludges)A. General Operating Requirements and Containment System *however, has not* ***

1. Is there at least 2 ft. (60 cm) of freeboard? *been in use since Oct. '85;* YES ✓ NO
2. Is there evidence of overtopping of the dikes? *only small amt. of liquid in bottom of basin* NO ✓ YES
3. Is there evidence of dike seepage, erosion or instability? *of basin* NO ✓ YES
4. Do earthen dikes have protective cover to minimize erosion? N/A YES ✓ NO

B. Waste Analysis and Trial Tests

1. Is the impoundment used to treat or store
- different
- wastes? YES
-
- NO
- ✓

If Yes:

- a. Are waste analyses and trial treatment or storage tests done on these different wastes?
or
Is there written, documented information on similar treatment or storage of similar wastes? N/A ✓ YES NO
- b. Are records available of these waste analyses in the operating record? N/A ✓ YES NO

C. Inspections

1. Is the impoundment **freeboard** inspected daily? *N/A not in use* YES NO
2. Is the impoundment, dike and surrounding vegetation inspected weekly for leaks, deterioration or failures? YES NO

*** An entry in this column indicates corrective action/response is needed

D. Special Requirements

1. Are **ignitable** or **reactive** wastes placed in the impoundment?

YES ___ NO ☒

If Yes:

a. Are they rendered non-ignitable or non-reactive

or
b. Protected from Sources of ignition or reaction?

N/A ☒ YES ___ NO ___

NOTE: N/A if impoundment is used solely for emergencies.

2. Is the impoundment is used to hold **incompatible** wastes?

YES ___ NO ☒

If Yes, are they handled in accordance with 40CFR 265.17?

N/A ☒ YES ___ NO ___

(i.e., so as to prevent violent reactions, toxic or flammable gases, damage to the impoundment, or threat to humans or the environment)

E. Ground Water Monitoring

1. Does the impoundment have a RCRA groundwater monitoring system?

N/A ☒ YES ___ NO ___

F. HSWA Requirements

N/A

1. Is the impoundment a "new unit",
a replacement of an existing unit,
or a lateral expansion of an existing unit?

YES ___ NO ___

If Yes:

a. Has impoundment received haz. waste since May 1985?

N/A ___ YES ___ NO ___

b. Does the impoundment have two or more liners and
a leachate collection system between such liners?

N/A ___ YES ___ NO ___

Capacity & Dimensions: 1.39 million gallon capacity

Comments: A closure plan was submitted on 11-25-85. As per an Agreed Final Judgment, a gw assessment was conducted. Possible contamination was found. A gw corrective action plan was instituted and is on-going.

* A surface impoundment that first received hazardous waste after Nov. 8, 1984.

TWC Solid Waste Inspection Report

TWC Reg. No. 30324Reg. Facility NO. Not on
NORSurface Impoundment ChecklistNo. 1 Lift Station →
closure in progressClass of Waste (H)Use of Impoundment (check): Treatment Storage ✓ Disposal Type of Waste: process wastewaterType of Liner: clay bottom, sheet piling wallsIs there a Leachate Collection and removal system? YES NO ✓Does owner/operator intend to "clean close" the impoundment at Closure? YES ✓ NO
(i.e., remove all hazardous liquids and sludges)A. General Operating Requirements and Containment System N/A → not in use ***

1. Is there at least 2 ft. (60 cm) of freeboard? YES NO
2. Is there evidence of overtopping of the dikes? NO YES
3. Is there evidence of dike seepage, erosion or instability? NO YES
4. Do earthen dikes have protective cover to minimize erosion? N/A YES NO

B. Waste Analysis and Trial Tests

1. Is the impoundment used to treat or store different wastes? YES NO ✓

If Yes:

- a. Are waste analyses and trial treatment or storage tests done on these different wastes?

orIs there written, documented information on similar treatment or storage of similar wastes? N/A ✓ YES NO

- b. Are records available of these waste analyses in the operating record? N/A ✓ YES NO

C. Inspections N/A → not in use

1. Is the impoundment **freeboard** inspected daily? YES NO
2. Is the impoundment, dike and surrounding vegetation inspected weekly for leaks, deterioration or failures? YES NO

*** An entry in this column indicates corrective action/response is needed

D. Special Requirements

1. Are **ignitable** or **reactive** wastes placed in the impoundment?

YES ___ NO ☒

If Yes:

a. Are they rendered non-ignitable or non-reactive

or
b. Protected from sources of ignition or reaction?

N/A ☒ YES ___ NO ___

NOTE: N/A if impoundment is used solely for emergencies.

2. Is the impoundment is used to hold **incompatible** wastes?

YES ___ NO ☒

If Yes, are they handled in accordance with 40CFR 265.17?

N/A ☒ YES ___ NO ___

(i.e., so as to prevent violent reactions, toxic or flammable gases, damage to the impoundment, or threat to humans or the environment)

E. Ground Water Monitoring

1. Does the impoundment have a RCRA groundwater monitoring system?

N/A ☒ YES ___ NO ___

F. HSWA Requirements

N/A

1. Is the impoundment a "new unit",
a replacement of an existing unit,
or a lateral expansion of an existing unit?

YES ___ NO ___

If Yes:

a. Has impoundment received haz. waste since May 1985?

N/A ___ YES ___ NO ___

b. Does the impoundment have two or more liners and
a leachate collection system between such liners?

N/A ___ YES ___ NO ___

Capacity & Dimensions: 19,102 gallons

Comments: _____

* A surface impoundment that first received hazardous waste after Nov. 8, 1984.

TWC Solid Waste Inspection Report
(40 CFR Part 264 Subpart G; Part 265 Subpart G)
CLOSURE-In-PROGRESS CHECKLIST

TWC Reg. No. 30324
Reg. Facility No. Not
NOR

Note: To be completed if company is closing a hazardous waste management facility.

1. Type of facility: No. 1 Lift Station *closing according to Agreed Final Judgment*
2. Type of closure: Full-Facility Closure ☐ Partial Closure ☒
3. Has closure plan received TWC approval or final modification? N/A ☐ YES ☒ NO ☐ ***
Date of approval: Dec. 15, 1985
4. If this is a partial closure, is this the last facility to be closed requiring RCRA ground water monitoring? N/A ☒ YES ☐ NO ☐
5. If this is an interim status facility:
- a. Has an approved public notice of closure been published? N/A ☒ YES ☐ NO ☐
Date published: _____
- b. Is a public hearing required? N/A ☒ YES ☐ NO ☐
Date of hearing: _____
6. Has on-site closure work started? N/A ☐ YES ☒ NO ☐
Date work initiated: 3-10-86
7. Is on-site closure work proceeding according to the work schedule in the approved closure plan? N/A ☐ YES ☐ NO ☒
8. Have 180 days elapsed since TWC approval of the closure plan? *but extension requested 3-5-86 because cannot complete closure on time* N/A ☐ YES ☐ NO ☒ SR
- a. If yes, has the Executive Director approved a closure period of greater than 180 days? N/A ☒ YES ☐ NO ☐
9. Was District Office notified of sampling event when complete removal of land-disposal facility was to have been accomplished? N/A ☐ YES ☒ NO ☐
10. Were TWC samples taken during the inspection to verify completion of closure? N/A ☐ YES ☒ NO ☐
- NOTE: List chain-of-custody tag numbers in comments section.
SW 12379 SW 12381 HM 08312
SW 12380 HM 08311
11. Is the closure completed? YES ☐ NO ☒
12. Has the closure certification been submitted to TWC? N/A ☐ YES ☐ NO ☒
Attach copy or explain.

*** An entry in this column indicates corrective/response is needed.

TWC Solid Waste Inspection Report
(TAC 335.241-247)

CONTAINER STORAGE AREA CHECKLIST

roll-off bins

TWC Reg. No. 30324

Reg. Facility No. 22,23

Class of Wastes (II)

NOTE: TAC rules 335.241-247 apply to interim status and 90-Day Storage exempt facilities.

- ***
1. Are containers in good condition? YES ☒ NO ☐
 2. Are the containers compatible with the wastes being stored? YES ☒ NO ☐
 3. Are containers kept closed and stored in a safe manner? YES ☐ NO ☐
 4. Are containers inspected weekly for leakage and deterioration? N/A YES ☐ NO ☐
 5. Are containers holding **ignitable** or **reactive** wastes kept at least 15 meters (50 ft.) from the facility's property line? N/A ☒ YES ☐ NO ☐
 6. Are containers holding **incompatible** wastes separated by a physical barrier or sufficient distance? N/A ☒ YES ☐ NO ☐
 7. Does the storage area have containment protection? YES ☒ NO ☐

8. Describe the Container Storage Area using comments sheet and/or photos:

3 areas containing roll-off bins are used for storage of Class II wastes (primarily filter cake) before off-site disposal; containers are open-topped; rainwater draining from the containers would be collected in the sewer system and go to the wastewater facility.

*** An entry in this column indicates corrective action/response is needed.

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

DATE 03/06/86

* 30324 LUBRIZOL CORP *

GENERAL INFORMATION:

LUBRIZOL CORP
DEER PARK PLT ATTN F HEJTMANEK
P O BOX 158
DEER PARK, TEXAS 77536

RECORD TYPE: GENERATOR/TRANSPORTER
REPORT FREQUENCY: A 05-76 M 05-76
REGISTRATION DATE: 07-05-76
LAST CHANGE DATE: 12-13-85
EMPLOYEE GROUP: 500-999
STATUS: ACTIVE
EPA ID NUMBER: TXD041067638
STAFF: JKB
HAZ WASTE STATUS: GENERATOR/TRANSPORTER/TSD FACILITY
METHOD TRANSPORT: HIGHWAY

CONTACT: FRANK HEJTMANEK
PHONE: 713-479-2851
BASIN: 10 SAN JACINTO
SEGMENT: 1006
DISTRICT: 07
REGION:
COUNTY: 101 HARRIS
WCO: 50077

GENERATING SITE LOCATION: TIDAL ROAD, DEER PARK, TEXAS

DESCRIPTION OF WASTE GENERATING ACTIVITIES:

SEQ SIC CODE DESCRIPTION OF INDUSTRIAL ACTIVITIES
01 2899 CHEMICAL PREPARATIONS, NEC

SOLID WASTE GENERATION SUMMARY:

SEQ	WCC	WASTE DESCRIPTION AND DISPOSITION	CLASS	FORM
001	270640	DIATOMACEOUS EARTH FILTER MEDIA WITH OIL, PLASTIC, & DIRT ON-SITE/OFF-SITE	II	SOLID (PREDOMINANTLY INORGANIC)
002	249950	BIOLOGICAL SLUDGE, DOMESTIC (SEWER SLUDGE) ON-SITE/OFF-SITE	II	SLUDGE (WATER BASE)
003	279760	PLANT REFUSE, GENERAL MISC. OFF-SITE	II	SOLID (PREDOMINANTLY INORGANIC)
004	910760	ORGANIC CHEMICALS (DRAINAGE, FLUSHINGS, AND WASHINGS), MISC. EPA NOS: D001 F005 U031 U122 U140 U147 U154 U188 U239 F003 NO LONGER GENERATED	IH	LIQUID (NON-WATER BASE)
005	900880	SODIUM ALUMINATE EPA NOS: D002 ON-SITE/SECONDARY USE → raw material for ww neutralization	IH	LIQUID (WATER BASE)
006	270240	SULFUR WASTE/SCRAP OFF-SITE/SOLD FOR RECOVERY	II	SOLID (PREDOMINANTLY INORGANIC)
007	111920	PARAFFIN, CHLORINATED NO LONGER GENERATED	I	LIQUID (NON-WATER BASE)
008	908260	SCRUBBER WATER (sodium sulfite) EPA NOS: D002 ON-SITE/OFF-SITE	IH	LIQUID (WATER BASE)
009	248930	CLARIFIER SLUDGE CONTAINING TRACE ORGANICS OFF-SITE	II	SLUDGE (WATER BASE)
010	913860	SOLVENTS, NON-HALOGENATED EPA NOS: F005 ON-SITE/OFF-SITE Sold for Recovery	IH	LIQUID (NON-WATER BASE)
011	910590	LAB WASTE, MISC. ORGANIC LIQUID EPA NOS: F003 U031 U122 U140 U147 U154 U188 U239 ON-SITE/OFF-SITE Sold for Recovery	IH	LIQUID (NON-WATER BASE)
012	921690	CARBON DISULFIDE EPA NOS: P022 ON-SITE/OFF-SITE	IH	SOLID (PREDOMINANTLY ORGANIC)

30324 LUBRIZOL CORP

(CONT)

SOLID WASTE GENERATION SUMMARY

(CONT):

SEQ	WCC	WASTE DESCRIPTION AND DISPOSITION	CLASS	FORM
013	914990	N-BUTYL ALCOHOL EPA NOS: U031	IH	LIQUID (NON-WATER BASE)
012		ON-SITE/OFF-SITE		
014	914250	ISOBUTYL ALCOHOL EPA NOS: U140	IH	LIQUID (NON-WATER BASE)
		ON-SITE/OFF-SITE		
015	911080	METHANOL EPA NOS: U154	IH	LIQUID (NON-WATER BASE)
		ON-SITE/OFF-SITE		
016	913640	PHENOL EPA NOS: U188	IH	LIQUID (NON-WATER BASE)
		ON-SITE/OFF-SITE		
017	910030	XYLENE/XYLOL EPA NOS: U239	IH	LIQUID (NON-WATER BASE)
		ON-SITE/OFF-SITE		
018	970490	SOIL, CONTAMINATED EPA NOS: P022 U031 U140 U147 U154 U188 U189 U239	IH	SOLID (PREDOMINANTLY INORGANIC)
		ON-SITE/OFF-SITE		
019	915490	ORGANIC LIQUID AND WATER EPA NOS: D001	IH	LIQUID (NON-WATER BASE)
		ON-SITE/OFF-SITE		
020	115490	ORGANIC LIQUID AND WATER ON-SITE/OFF-SITE	I	LIQUID (NON-WATER BASE)
021	915530	OIL, CRANKCASE EPA NOS:	IH	LIQUID (NON-WATER BASE)
		ON-SITE/OFF-SITE/SOLD FOR RECOVERY		

drums < 90 days
raw materials in case of
spill or off-spec

Sold for Recovery
Sold for Recovery

HAZARDOUS WASTE DESCRIPTION	IGNIT	CORR	HAZARD CODES EP TOX	REACT	ACUTE	TOX
D001 IGNITABLE WASTE	X					
D002 CORROSIVE WASTE		X				
F003 SPENT NON-HALOGENATED SOLVENTS, XYLENE, ACETONE, ETHYL ACETATE, ETHYL BENZENE, ETHYL ETHER, N-BUTYL ALCOHOL, CYCLOHEXANONE, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS.	X					
F005 SPENT NON-HALOGENATED SOLVENTS, METHANOL, TOLUENE, METHYL ETHYL KETONE, METHYL ISOBUTYL KETONE, CARBON DISULFIDE, ISOBUTANOL, PYRIDINE, AND STILL BOTTOMS FROM THE RECOVERY OF THESE SOLVENTS.	X					X
P022 CARBON DISULFIDE OR CARBON BISULFIDE					X	X
U031 1-BUTANOL OR N-BUTYL ALCOHOL	X					
U122 FORMALDEHYDE OR METHYLENE OXIDE						X
U140 ISOBUTYL ALCOHOL OR 1-PROPANOL, 2-METHYL	X					X
U147 2,5-FURADIONE OR MALEIC ANHYDRIDE						X
U154 METHANOL OR METHYL ALCOHOL	X					
U188 BENZENE, HYDROXY- OR PHENOL						X
U189 PHOSPHORUS SULFIDE OR SULFUR PHOSPHIDE				X		
U239 BENZENE, DIMETHYL- OR XYLENE	X					

COMPANY NAME

REGISTRATION
FULL RECORD REPORT

DATE 03/05/00

30324 LUBRIZOL CORP

(CONT)

SOLID WASTE GENERATION SUMMARY

(CONT):

SOLID WASTE MANAGEMENT FACILITIES SUMMARY:-----

SEQ DESCRIPTION AND STATUS

01 TANK (SUB-SURFACE) *waste cake pit*
INACTIVE *undergoing closure*
DISTRICT: 07

LATITUDE:

CAPACITY:

LONGITUDE:

ELEVATION:

SURFACE AREA:

DATE OPENED: 01-64

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

001 II DIATOMACEOUS EARTH FILTER MEDIA WITH OIL, PLASTIC, & DIRT

002 II BIOLOGICAL SLUDGE, DOMESTIC (SEWER SLUDGE)

006 II SULFUR WASTE/SCRAP

FACILITY DESCRIPTION: REINFORCED CONCRETE BOX (*below-grade*)

02 BULK STORAGE AREA (ENCLOSED)

ACTIVE

DISTRICT: 07

LATITUDE:

CAPACITY:

LONGITUDE:

ELEVATION:

SURFACE AREA:

DATE OPENED: 08-72

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

003 II PLANT REFUSE, GENERAL MISC.

FACILITY DESCRIPTION: 3-40 CU YD STEEL BINS

BTI 03 TANK (SURFACE)

ACTIVE

DISTRICT: 07

LATITUDE:

CAPACITY:

LONGITUDE:

ELEVATION:

SURFACE AREA:

DATE OPENED: 02-73

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

009 II CLARIFIER SLUDGE CONTAINING TRACE ORGANICS

FACILITY DESCRIPTION: 4849 CARBON STEEL VESSEL C-61

HESC 04 TANK (SURFACE)

ACTIVE

LATITUDE:

CAPACITY: 6000 GAL

LONGITUDE:

ELEVATION:

SURFACE AREA:

DATE OPENED:

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

019 IH ORGANIC LIQUID AND WATER

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

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30324 LUBRIZOL CORP (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):

FACILITY DESCRIPTION: TANK W0-1 CARBON STEEL

<90 day storage

~~WESC~~ 05 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 13709 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL VESSEL - W0-3

06 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 8408 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL VESSEL - W-05

07 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 25320 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL VESSEL W0-6

08 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10000 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
020 1 ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL VESSEL T-19P

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

DATE 03/25/86

30324 LUBRIZOL CORP (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

HESC 09	TANK (SURFACE)	LATITUDE:	CAPACITY: 4500 GAL
	ACTIVE	LONGITUDE:	ELEVATION:
		SURFACE AREA:	
		DATE OPENED:	
		DATE INACTIVE:	
		DATE CLOSED:	
		SUBJECT TO PERMIT:	
		DEED REQUIRED:	DATE RECORDED:
	FACILITY USE: STORAGE		
	020 I ORGANIC LIQUID AND WATER		
	FACILITY DESCRIPTION: FIBERCAST T19-W		
10	TANK (SURFACE)	LATITUDE:	CAPACITY: 10000 GAL
	ACTIVE	LONGITUDE:	ELEVATION:
		SURFACE AREA:	
		DATE OPENED:	
		DATE INACTIVE:	
		DATE CLOSED:	
		SUBJECT TO PERMIT:	
		DEED REQUIRED:	DATE RECORDED:
	FACILITY USE: STORAGE		
	020 I ORGANIC LIQUID AND WATER		
	FACILITY DESCRIPTION: CARBON STEEL T-19X		
11	TANK (SURFACE)	LATITUDE:	CAPACITY: 12000 GAL
	ACTIVE	LONGITUDE:	ELEVATION:
		SURFACE AREA:	
		DATE OPENED:	
		DATE INACTIVE:	
		DATE CLOSED:	
		SUBJECT TO PERMIT:	
		DEED REQUIRED:	DATE RECORDED:
	FACILITY USE: STORAGE		
	020 I ORGANIC LIQUID AND WATER		
	FACILITY DESCRIPTION: CARBON STEEL T-19Y		
12	TANK (SURFACE)	LATITUDE:	CAPACITY: 16000 GAL
	ACTIVE	LONGITUDE:	ELEVATION:
		SURFACE AREA:	
		DATE OPENED:	
		DATE INACTIVE:	
		DATE CLOSED:	
		SUBJECT TO PERMIT:	
		DEED REQUIRED:	DATE RECORDED:
	FACILITY USE: STORAGE		
	020 I ORGANIC LIQUID AND WATER		
	FACILITY DESCRIPTION: CARBON STEEL T-20X		

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

DATE 03/06/85

30324 LUBRIZOL CORP (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

13 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 12000
ELEVATION:

FACILITY USE: STORAGE
005 IH SODIUM ALUMINATE
FACILITY DESCRIPTION: CARBON STEEL T-23X

DATE RECORDED:

14 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 15231
ELEVATION:

FACILITY USE: STORAGE
008 IH SCRUBBER WATER
FACILITY DESCRIPTION: DERAKANE 470 CA-1

DATE RECORDED:

15 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 10000 GAL
ELEVATION:

FACILITY USE: STORAGE
008 IH SCRUBBER WATER
FACILITY DESCRIPTION: DERAKANE 470 J-42

DATE RECORDED:

HESC 16 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 12126 GAL
ELEVATION:

FACILITY USE: STORAGE
020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL H-6

DATE RECORDED:

WWT
System
→ DSI,
Impak
(14 & 15)

30324 LUBRIZOL CORP (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

17 TANK (SURFACE) *closure plan submitted*
~~ACTIVE~~
Inactive

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 6000 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
017 1H ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: CARBON STEEL EFFLUENT TANK CAR SHELL

HESC 18 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY: 18000 GAL
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
010 1H SOLVENTS, NON-HALOGENATED
011 1H LAB WASTE, MISC. ORGANIC LIQUID
021 1H OIL, CRANKCASE
FACILITY DESCRIPTION: CARBON STEEL B-32

19 HULK STORAGE AREA (ENCLOSED)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
002 11 BIOLOGICAL SLUDGE, DOMESTIC (SEWER SLUDGE)
FACILITY DESCRIPTION: 3-30 CU. YD. STEEL BIN

*Rollins,
if generate*

20 CONTAINER STORAGE AREA
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED:
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE
012 1H CARBON DISULFIDE
013 1H ETHYL ALCOHOL
014 1H ISOBUTYL ALCOHOL

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

*** TEXAS WATER COMMISSION ***
INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

PAGE 15252
DATE 03/06/85

30324 LUBRIZOL CORP (CONT)

SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):

015 IH METHANOL

016 IH PHENOL

017 IH XYLENE/XYLOL

018 IH SOIL, CONTAMINATED

FACILITY DESCRIPTION: DRUM STORAGE LESS THAN 90 DAYS

21 MISCELLANEOUS STORAGE CONTAINERS → delete
ACTIVE

LATITUDE:

LONGITUDE:

CAPACITY:

ELEVATION:

SURFACE AREA:

DATE OPENED:

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

001 II DIATOMACEOUS EARTH FILTER

MEDIA WITH OIL, PLASTIC, & DIRT

002 II BIOLOGICAL SLUDGE, DOMESTIC

(SEWER SLUDGE)

006 II SULFUR WASTE/SCRAP

FACILITY DESCRIPTION: 7 STEEL ROLL-OFF BOXS

22 BULK STORAGE AREA
ACTIVE

references #21

LATITUDE:

LONGITUDE:

CAPACITY:

ELEVATION:

SURFACE AREA:

DATE OPENED: 11-85

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

001 II DIATOMACEOUS EARTH FILTER

MEDIA WITH OIL, PLASTIC, & DIRT

002 II BIOLOGICAL SLUDGE, DOMESTIC

(SEWER SLUDGE)

006 II SULFUR WASTE/SCRAP

FACILITY DESCRIPTION:

23 BULK STORAGE AREA
ACTIVE

references #21

LATITUDE:

LONGITUDE:

CAPACITY:

ELEVATION:

SURFACE AREA:

DATE OPENED: 11-85

DATE INACTIVE:

DATE CLOSED:

SUBJECT TO PERMIT:

DEED REQUIRED:

DATE RECORDED:

FACILITY USE: STORAGE

001 II DIATOMACEOUS EARTH FILTER

MEDIA WITH OIL, PLASTIC, & DIRT

002 II BIOLOGICAL SLUDGE, DOMESTIC

(SEWER SLUDGE)

006 II SULFUR WASTE/SCRAP

FACILITY DESCRIPTION:

SEQUENCE: COMPANY DISTRICT
COMPANY NAME

INDUSTRIAL SOLID WASTE SYSTEM
REGISTRATION
FULL RECORD REPORT

DATE 03/06/86

30324 LUBRIZOL CORP (CONT)
SOLID WASTE MANAGEMENT FACILITIES SUMMARY (CONT):
SEQ DESCRIPTION AND STATUS

Hazelwood Landfill
24 BULK STORAGE AREA *references #21*
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE

001 II DIATOMACEOUS EARTH FILTER MEDIA WITH OIL, PLASTIC, & DIRT
002 II BIOLOGICAL SLUDGE, DOMESTIC (SEWER SLUDGE)
006 II SULFJR WASTE/SCRAP

FACILITY DESCRIPTION:

HESC 25 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE

020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: TANK RA-3

" 26 TANK (SURFACE)
ACTIVE

LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

FACILITY USE: STORAGE

020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: TANK WO-4

" 27 TANK (SUREACE)
ACTIVE

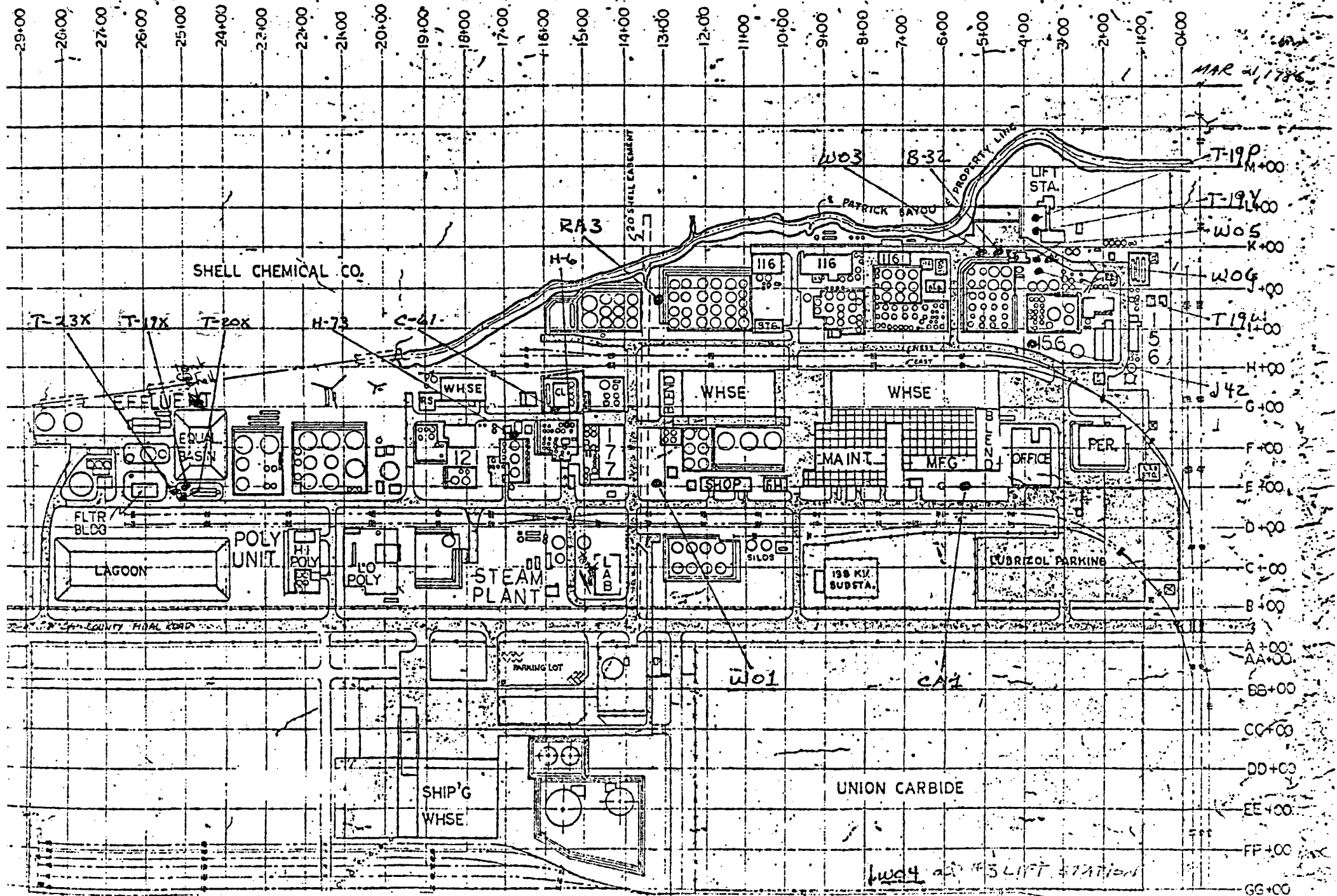
LATITUDE:
LONGITUDE:
SURFACE AREA:
DATE OPENED: 11-85
DATE INACTIVE:
DATE CLOSED:
SUBJECT TO PERMIT:
DEED REQUIRED:

CAPACITY:
ELEVATION:

DATE RECORDED:

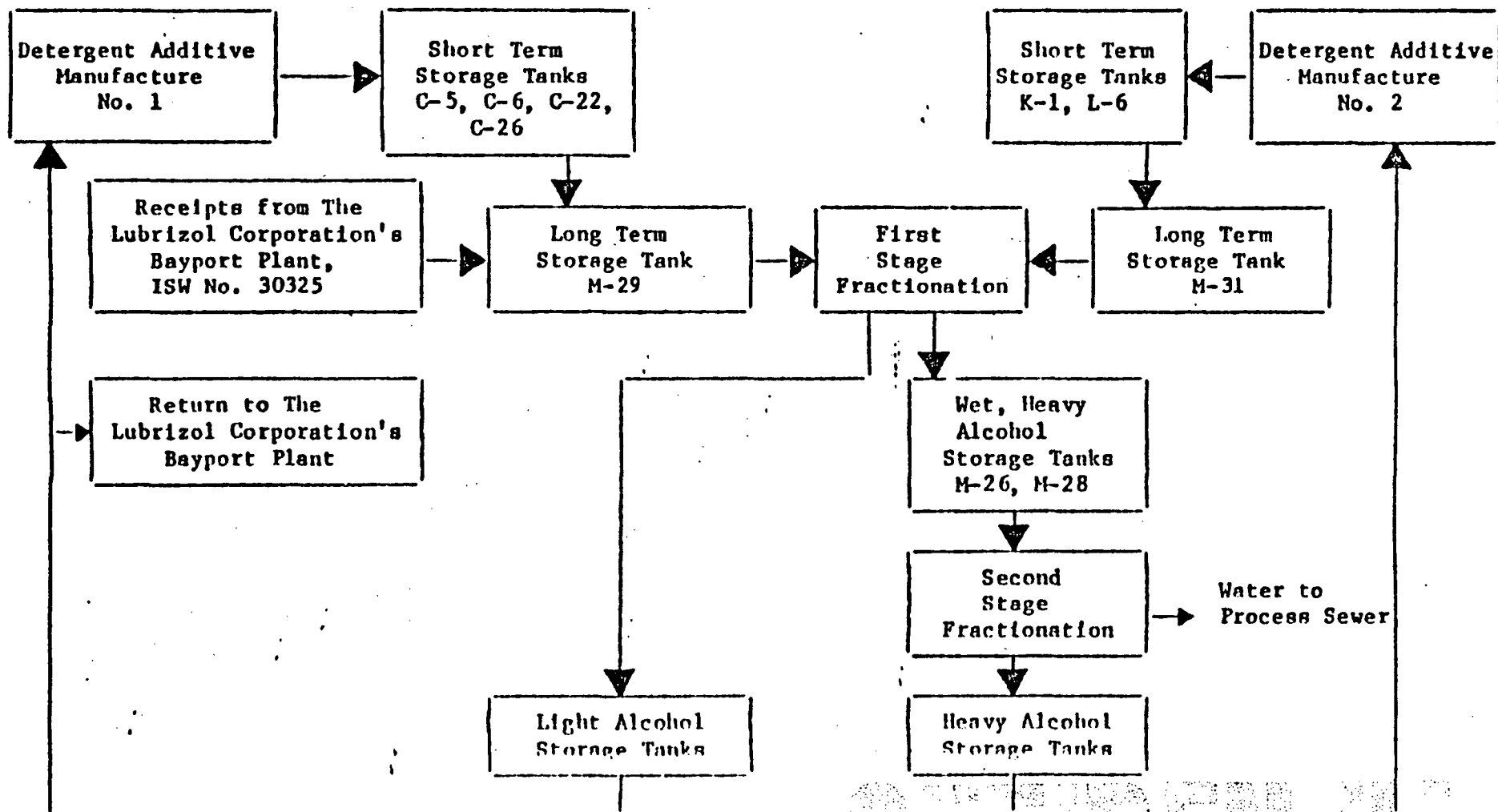
FACILITY USE: STORAGE

020 I ORGANIC LIQUID AND WATER
FACILITY DESCRIPTION: TANK H-73



PROCESS FLOW DIAGRAM

WET, MIXED ALCOHOLS FROM DETERGENT ADDITIVE MANUFACTURE



TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



Larry R. Soward, Executive Director
Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

May 5, 1986

Mr. Julius Rexer
Sr. Environmental Control Engineer
Lubrizol Corporation
P. O. Box 158
Deer Park, Texas 77536

Dear Mr. Rexer:

Re: Lubrizol, ISW Registration No. 30324

On March 21, 1986, Susan Ripley of this Agency, accompanied by Bob Copes and yourself, conducted an industrial solid waste compliance inspection of your facility. The following deficiencies were noted:

1. Texas Administrative Code (TAC), Section 336.6 (c) - Notification Requirements
Lubrizol's registration should be updated to include the lab waste tank, the waste tank designated RA-10, and asbestos as a waste generated. Additionally, the hazardous filter cake must be included as a separate wastestream - not as part of the Class II filter cake. It must also be disposed of accordingly. A request to amend the registration should be sent to:

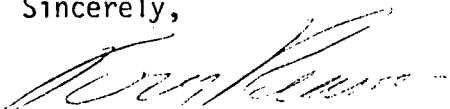
Texas Water Commission
Attention: Mr. Dick Martin
P. O. Box 13087
Austin, Texas 78711
2. 40 Code of Federal Regulations (CFR) Part 265.16 (c) & (d) - Personnel Training
The facility's personnel training program was not complete.
3. TAC Section 336.4 & 40 CFR Part 265.15 (a) - General Prohibitions and Tank Inspections
Tank B-32, which holds a hazardous wastestream, was noted to be corroded. It poses a threat of discharge since there is inadequate containment around the tank.
4. TAC Section 336.4 - General Prohibitions
During a closure inspection of March 24, 1986, spills of oily waste were noted on the ground around RA-10 and were being covered up with sand. Please note that contaminated soil must be removed and disposed of properly.

Please respond to this office in writing by June 6, 1986 with your plans and implementation schedule which will ensure corrective action of the above listed deficiencies

Mr. Julius Rexer
Page 2
May 5, 1986

by June 15, 1986. If you have any questions, please contact Susan Ripley at
(713)-479-5981.

Sincerely,

A handwritten signature in dark ink, appearing to read "Tom Kearns", written in a cursive style.

Tom Kearns
Manager
Hazardous and Solid Waste
Southeast Region

TK/SR/ah



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION VI
1201 ELM STREET
DALLAS, TEXAS 75270

MEMORANDUM

DATE: 5/20/86

SUBJECT: RCRA Compliance Monitoring Inspection Report(s)

FROM: David Peters, Chief
Hazardous Waste Section (6E-SH)

TO: Bill Taylor, Chief
Enforcement Section (6H-CE)

ATTN: Linda Thompson

<input type="checkbox"/>	Lead CEI
<input type="checkbox"/>	Lead CEI/Case Dev.
<input type="checkbox"/>	Oversight CEI
<input type="checkbox"/>	CME Sampling
<input type="checkbox"/>	Lead Sampling
<input type="checkbox"/>	LOIS
<input checked="" type="checkbox"/>	other/addendum

The attached RCRA Compliance Monitoring Inspection Report(s) have been prepared and reviewed by Environmental Services (6E) and are being forwarded to you for your information and action.

Facility
Lubrizol

EPA I.D. No.
TXD041067638

Apparent Violation
Yes No

<input type="checkbox"/>	Generators
<input type="checkbox"/>	Generators Supplement
<input type="checkbox"/>	TSD Facilities
<input type="checkbox"/>	Container Storage
<input type="checkbox"/>	Tanks
<input type="checkbox"/>	Thermal Treatment
<input type="checkbox"/>	Surface Impoundments
<input type="checkbox"/>	Waste Piles
<input type="checkbox"/>	Land Treatment
<input type="checkbox"/>	Land Fills
<input type="checkbox"/>	Chemical, Physical & Biological Treatment
<input type="checkbox"/>	Incinerators
<input type="checkbox"/>	Transporters
<input type="checkbox"/>	Comprehensive Ground-Water Evaluation
<input type="checkbox"/>	Closure
<input type="checkbox"/>	Post-Closure
<input type="checkbox"/>	LOIS
<input type="checkbox"/>	ERTEC
<input checked="" type="checkbox"/>	Attachments
<input type="checkbox"/>	Photos

NY 1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

NS 5-20-86
C85-286

EPA ID: TXD 041067638

Major Facility: X Non-Major: ___

Data Entry Date: ___

RSP: ___

QC: ___

Handler Name: LUBRIZOL

Action: C Sequence Number: 02

Initial Date: ___

Link: ___

Action: A Type of Evaluation: 01
Date of Evaluation: 850910
Contact Person: MV

Sequence Number: ___
Responsible Agency: S

Free Fields: 1. ___ 2. ___ 3. ___ 4. ___
Comments (Header Level): Action A Sequence Number ___

① GWQA PLAN FOR NO. 1 LIFT STATION SUBMITTED BS1112; AMENDED 860129

② TWC APPROVAL OF PLAN 060213; EXPECTING RESULTS WITHIN 105 DAYS

Class	Action	GW	CP	FR	PS	CS	MA	OT	1	2	3	4
1	A	X	0	0	—	—	0	0	—	—	—	—
2	A	0	0	0	—	—	0	X	—	—	—	—
3	—	—	—	—	—	—	—	—	—	—	—	—

Comments (Violation Level): (FOR CLASS 1 VIOLATION)

NO GWM @ SI #1 AND INADEQUATE AT SI #2; INSUFFICIENT # OF WELLS

Facility ID: SSD # # # # #

ACT	CLS/AREA/	SEQ NO	Action		Resp AGCY	Compliance Dates			
			TYPE	DATE		SCHED	ACTUAL		
A	1 GW	—	03	860213	S	860530	—	—	—
A	1 GW	—	11	851011	S	860530	—	—	—
A	2 DI	—	03	851007	S	851108	851107	—	—

STATUS CODE	STATUS DATE	HEARING DATE
—	—	—
—	—	—

PENALTY ASSESSED	PENALTY COLLECTED
—	10000
—	—

CONTACT PERSON
CB
MV

FREE 1	FIELDS 2
—	—
—	—

Comments (Enforcement Level):

1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

K6 5-2-86

EPA ID: TXD 0 4 1 0 6 7 6 3 8

Major Facility: X Non-Major:

Data Entry Date:

RSP:

QC:

Handler Name: LUBRIZOL

Action: A Sequence Number:

Initial Date: 8 6 0 3 2 1 Link:

Action: A Type of Evaluation: 0 4
Date of Evaluation: 8 6 0 3 2 1
Contact Person: CB

Sequence Number:
Responsible Agency: S

Free Fields: 1. 2. 3. 4.
Comments (Header Level): Action X Sequence Number

Class	Action	GW	CP	FR	PS	CS	MA	OT	1	2	Free Fields	3	4
1	<u>A</u>	<u>0</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
2	<u>A</u>	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u>X</u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Comments (Violation Level):

Facility ID: SSD 1 1 1 1 1 1 1 1

ACT	CLS/AREA/	SEQ NO	Action		Resp AGCY	Compliance Dates		FREE	FIELDS
			TYPE	DATE		SCHED	ACTUAL		
<u>A</u>	<u>2 GW</u>	<u> </u>	<u>03</u>	<u>86 04 18</u>	<u>S</u>	<u>86 05 18</u>	<u> </u>	<u> </u>	
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	
STATUS CODE	STATUS DATE	HEARING DATE	PENALTY		CONTACT PERSON	FREE		FIELDS	
			ASSESSED	COLLECTED		1	2		
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u>CB</u>	<u> </u>	<u> </u>		
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>		

Comments (Enforcement Level):

SAMPLING Procedures Inadequate

FY 1986 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

KG 5-2-86

EPA ID: TX D 0 4 1 0 6 7 6 3 8

Major Facility: X Non-Major:

Data Entry Date:

RSP:

QC:

Handler Name: LUERZOL

Action: D Sequence Number: 03

Initial Date:

Link:

Action: Type of Evaluation:

Sequence Number:

Date of Evaluation:

Responsible Agency:

Contact Person:

Comments (Header Level): Free Fields: 1. 2. 3. 4.
Action Sequence Number

Class	Action	GW	CP	FR	FS	CS	MA	OT	Free Fields			
1	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	1	2	3	4
2	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
3	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Comments (Violation Level):

Facility ID: SSD

ACT	CLS/AREA/	SEQ NO	TYPE	Action		Resp AGCY	Compliance Dates			
				DATE			SCHED		ACTUAL	
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
STATUS CODE	STATUS DATE	HEARING DATE	PENALTY		CONTACT PERSON	FREE 1	FIELDS 2			
			ASSESSED	COLLECTED						
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>
<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>	<u> </u>

Comments (Enforcement Level):

P - C - L - W TRACKING

K6 4-4 86

Lubrizol

P - C - L - W TRACKING

FACILITY ID: TXDoy1067638

NEW ENTRY X

CHANGE ENTRY -

DELETE ENTRY -

HEADER TYPE: P
ACTION ITEM: 39

HEADER TYPE SEQ NO: 01
TRACKING SEQ NO: --

RESPONSIBLE AGENCY: S

RESPONSIBLE PERSON: MBH

DATE DUE: 860131

ACTION DATE: 860131

STATUS CODE: ES

FREE FIELD 1: -
FREE FIELD 4: ---

FREE FIELD 2: --
FREE FIELD 5: ---

FREE FIELD 3: ---
FREE FIELD 6: ---

COMMENT TEXT (80 CHARACTERS MAXIMUM) :

PERMIT ACTION LINKED TO -----

PERMIT ACTION LINK CHANGED FROM ----- TO -----

DELETE PERMIT ACTION LINK TO -----



LAW ENGINEERING TESTING COMPANY

geotechnical, environmental & construction materials consultants

5500 GUHN ROAD
HOUSTON, TEXAS 77040
(713) 939-7161

June 19, 1985

The Lubrizol Corporation
P.O. Box 158
Deer Park, Texas 77536

ATTENTION: Mr. Robert G. Copes
Environmental Control Manager

SUBJECTS: DATA REPORT FOR GROUND-WATER ASSESSMENT
Equalization Basin
Deer Park, Texas
LAW ENGINEERING JOB NO. HT-1286-84W

Gentlemen:

Law Engineering is pleased to submit this data report on ground-water assessment for the subject project. Included in this report are a summary of the field investigation techniques, well and piezometer installation procedures and records, and laboratory procedures and results. Also included are isoconcentration maps, a potentiometric map, sand isopach map, sand structure contour map and cross sections. These maps and cross sections are based on water level and water quality information collected during this investigation and all available boring information. Additionally, hydraulic conductivity values based on slug tests conducted during the field investigation are presented. This work was authorized by issuance of your purchase order H-27485 dated June 12, 1985.

DATA REPORT FOR GROUND-WATER ASSESSMENT
June 19, 1985
Page Two

We appreciate this opportunity to be of service to you and look forward to working with you on this or other projects in the future. If you have any questions, please do not hesitate to contact us.

Very Truly Yours,

LAW ENGINEERING TESTING COMPANY

Elizabeth A. Solek

Elizabeth A. Solek
Project Hydrogeologist

Owen D. Sveter

Owen D. Sveter
Senior Hydrogeologist

cc: Mr. Robert W. Lee/TDWR - Austin
Mr. Merton Coloton/TDWR - Deer Park

LAW Engineering is pleased to submit this data report of ground-water assessment for the project at Deer Park, Texas. Included in this report are a summary of the field investigation, data collected, and a description of the installation, operation, and maintenance of the monitoring system. The data collected and presented in this report were obtained from the field investigation and laboratory analysis of the water samples collected. The data presented in this report are for the period of June 19, 1985, and are subject to change as more data are collected and analyzed. The data presented in this report are for the period of June 19, 1985, and are subject to change as more data are collected and analyzed.

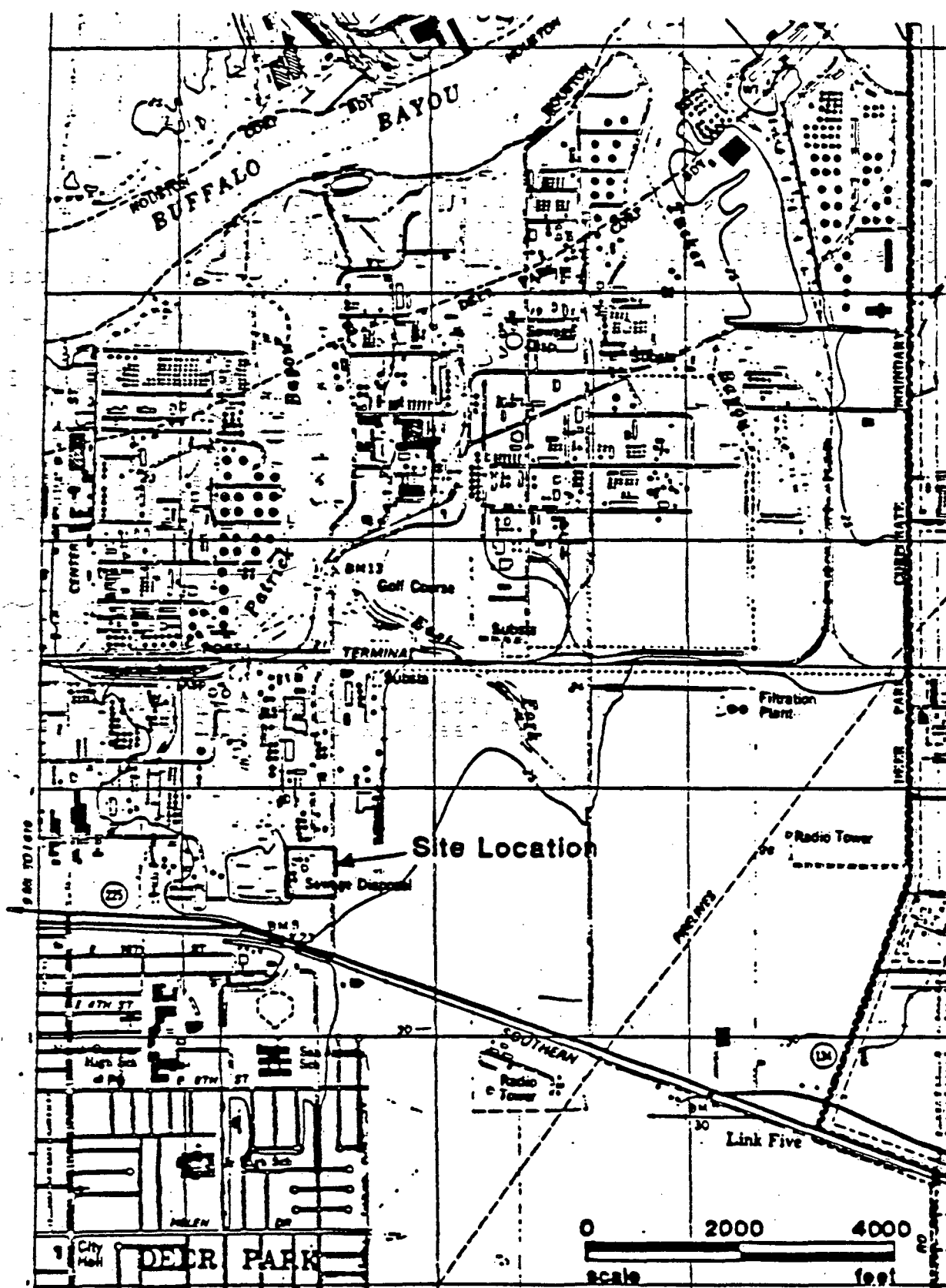


FIGURE 1
SITE LOCATION PLAN



LAW ENGINEERING TESTING COMPANY
HOUSTON, TEXAS
LUBRIZOL CORPORATION
DEER PARK, TEXAS
LAW PROJECT No. HT-1286-84W

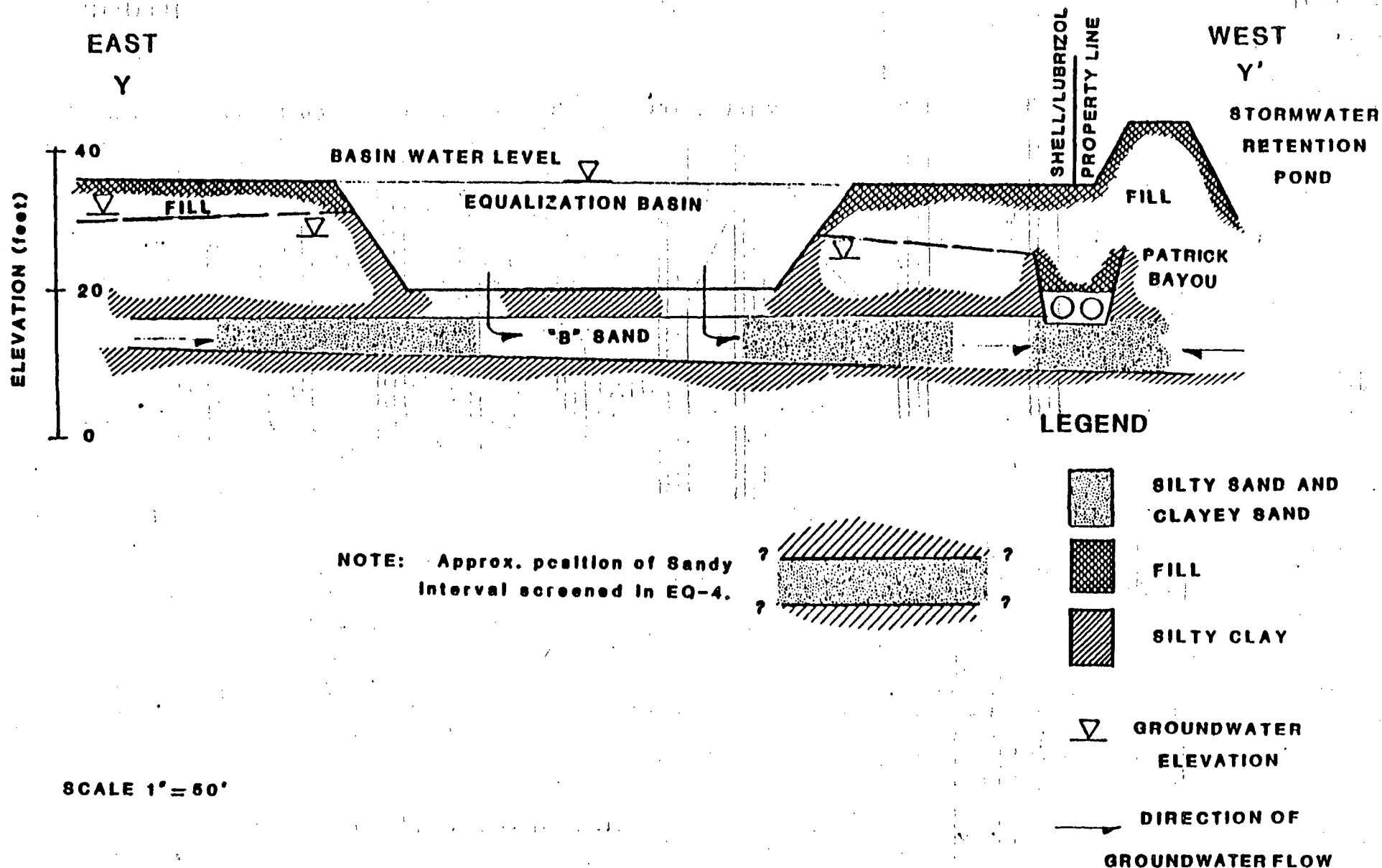


FIGURE 4

GENERALIZED CROSS-SECTION Y-Y'

LETCO JOB NO. HT-1286-84W



LAW ENGINEERING TESTING COMPANY

HOUSTON TEXAS

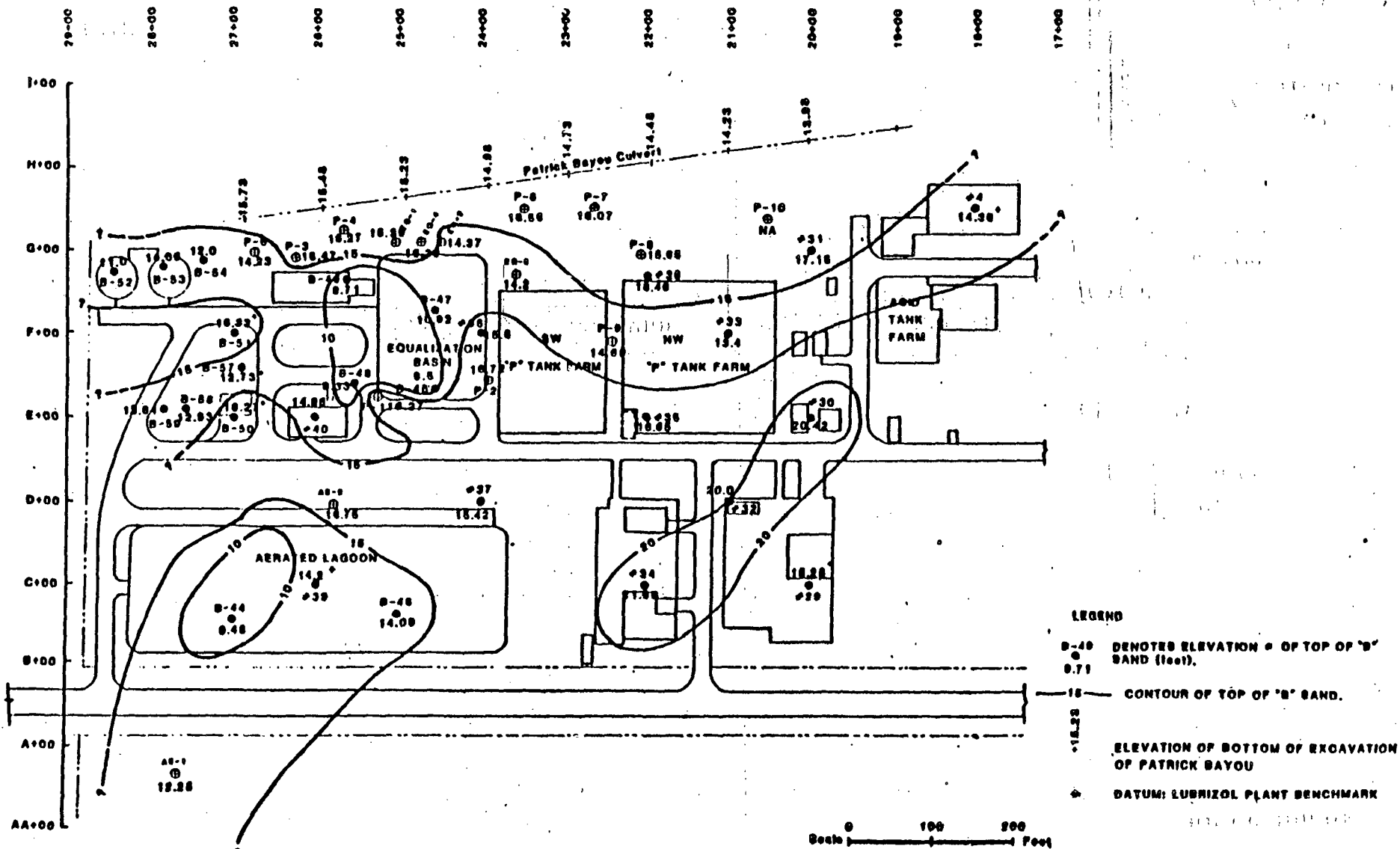
THE LUBRIZOL CORPORATION

DEER PARK, TEXAS

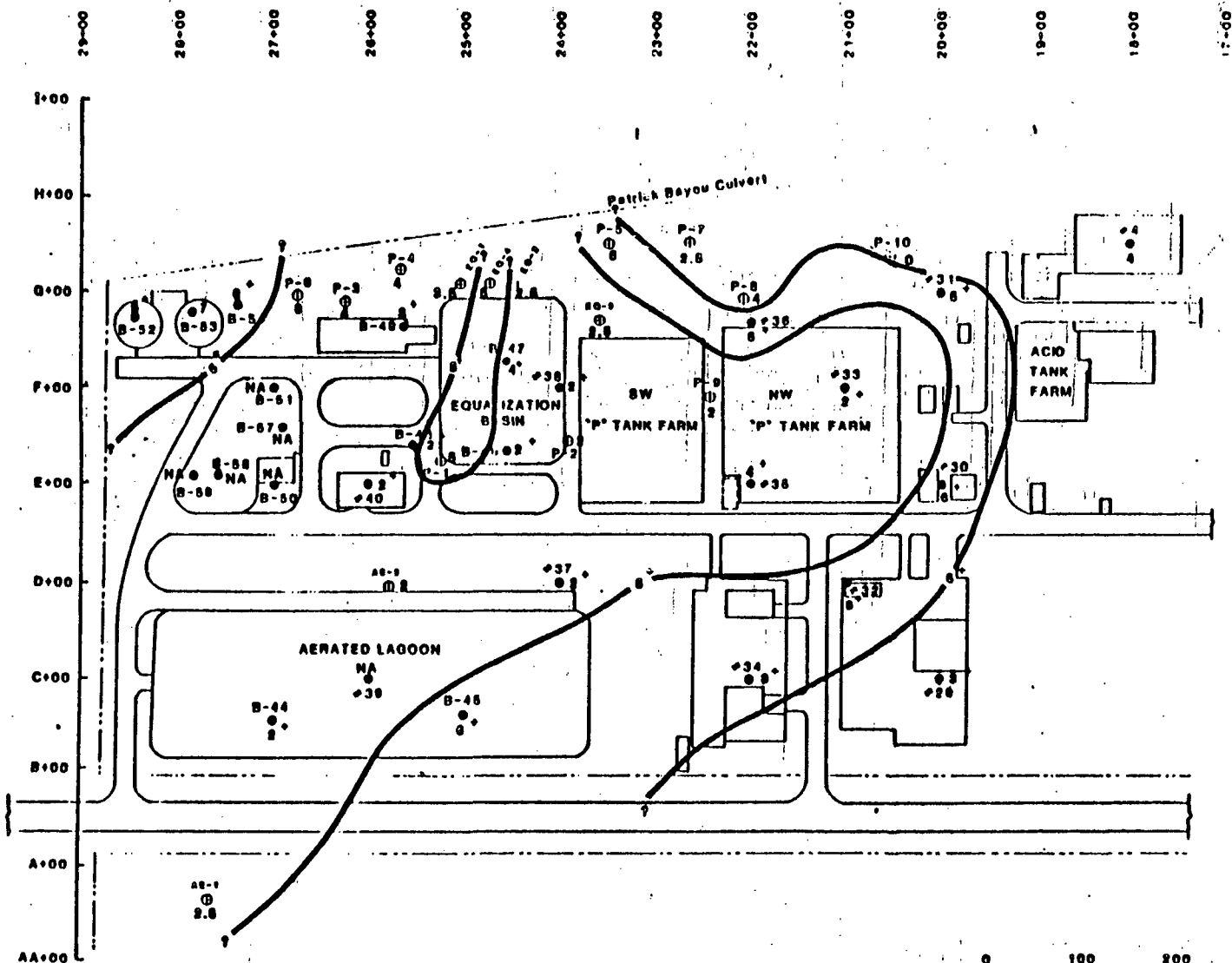
PROJECT

GROUNDWATER ASSESSMENT



EQUALIZATION BASIN



GROUNDWATER ASSESSMENT EQUALIZATION BASIN		
Drawn As: MATH	The LUBRIZOL CORP. Dear Field, Texas	Checked By: D.J.M.
Date: 8/11/88		APP. BY: EAS
ELEVATION of TOP of 'B' SAND		
THE LUBRIZOL CORPORATION 14000 LUBRIZOL DRIVE CLEVELAND, OHIO 44130-2000		FIGURE 8

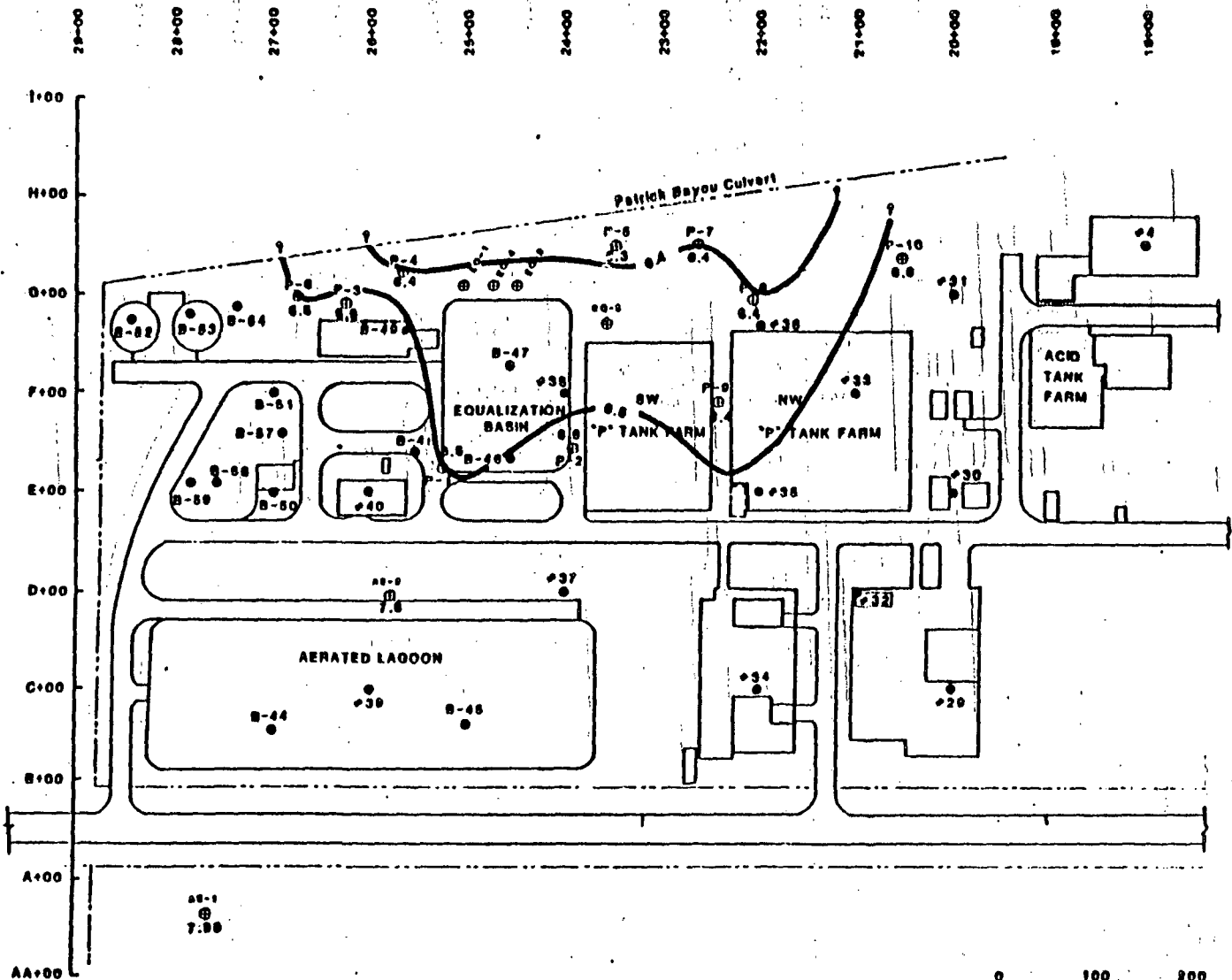


LEGEND

-  THICKNESS OF "B" SAND (ft.)
-  CONTOUR OF MINIMUM THICKNESS OF "B" SAND (ft.)

Scale 0 100 200 Feet

GROUNDWATER ASSESSMENT EQUALIZATION BASIN		
NAME: AS SHOWN	THE LUBRIZOL CORP.	DATE: 08/11/99
DATE: 08/11/99		BY: JAS
"B" SAND THICKNESS MAP		
LAWRENCE ENGINEERING TECHNOLOGY, INC. 10000 N. 100th St., Suite 100 Houston, Texas 77036-2000		FIGURE 6



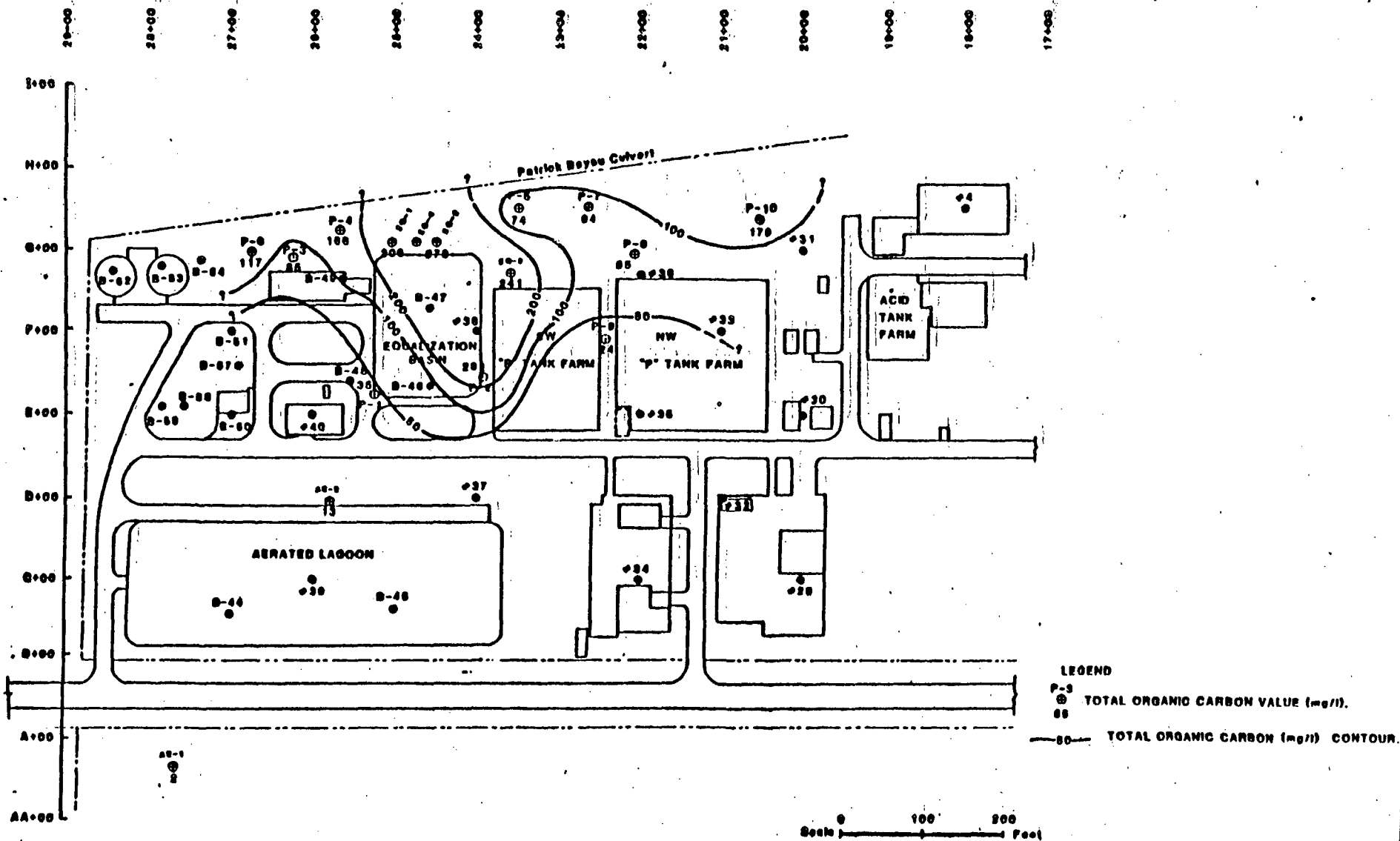
LEGEND

P-3 pH VALUES (field)
8.0

6.6 pH CONTOUR

Scale 0 100 200 Feet

GROUNDWATER ASSESSMENT EQUALIZATION BASIN		
WELL: 220 ABOVE	LURROL CORP., DEER PARK, TEXAS	DATE: 3/11/85
pH CONTOUR MAP		FIGURE 8
LAWRENCE & ASSOCIATES, INC. 10000 TEXAS 15000 JDB NO. 15-1555-001		



GROUNDWATER ASSESSMENT EQUALIZATION BASIN		
NAME: AS NOYES	THE LUBRICAL CORP. Buck Park, Texas	DRAWN BY: C.M.J.L.
DATE: 8/11/88		APP. BY: RK
TOTAL ORGANIC CARBON CONTOUR MAP		
LAWSON ENGINEERING TESTING COMPANY HOUSTON HEADQUARTERS JOB NO. HT-1085-B W		FIGURE 11

TABLE 1
HYDRAULIC CONDUCTIVITY
VALUES

Monitor Well

Hydraulic
Conductivity (ft/sec)

EQ-1

2.89×10^{-6}

EQ-3

1.39×10^{-5}

Boring and
Sample Interval

Hydraulic
Conductivity (ft/sec)

P-8 (8-10 ft)

4.56×10^{-11}

P-1 (7- 9 ft)

5.9×10^{-11}

FIELD INVESTIGATION

Eleven soil test borings were performed during the ground-water assessment study. These were drilled in the vicinity of the equalization basin at the locations indicated on Figure 2.

The borings were advanced by a hollow stem auger drilling process. All were drilled with a 7 7/8" bit. Samples of the subsurface materials were obtained at 5 foot intervals. Upon completion of the soil test borings, a water sample was collected and a piezometer was installed. Description of procedures for collection of the sample and installation of the piezometers are included with the well installation reports. A piezometer was not installed in Boring P-9 because of its location in an area of heavy truck traffic.

One of the borings was advanced to a depth of 60 feet using a rotary drilling process. A monitoring well was installed in this boring. A well installation report and description of the well installation procedure is included in this Appendix.

Upon completion of installation of the piezometers and monitoring well, the elevation and coordinates of the location were surveyed by Lubrizol personnel.

Samples of the subsurface materials were obtained by undisturbed sampling. Relatively undisturbed samples were obtained by forcing sections of 3 inch O.D. steel tubing into the soil at specific sampling levels. This sampling procedure is described by ASTM Designation D-1587-67. These samples were extruded from their sampling tubes in the field. Additionally, two undisturbed samples were not extruded in the field in order to perform permeability tests. The extruded undisturbed samples were placed in glass jars and transported to our laboratory. In the laboratory the samples were examined to verify the field classifications for the preparation of Soil Test Boring Logs included in the Appendix.

Soil test boring logs from this assessment have been included in this report, as well as existing soiling boring logs reviewed before start of the field investigation.

KEY TO CLASSIFICATION AND SYMBOLS

CORRELATION OF PENETRATION RESISTANCE WITH RELATIVE DENSITY AND CONSISTENCY

	<u>NO. OF BLOWS, N</u>	<u>RELATIVE DENSITY</u>
SANDS	0-4	Very Loose
	5-10	Loose
	11-30	Firm
	31-50	Dense
	Over 50	Very Dense

	<u>NO. OF BLOWS, N</u>	<u>CONSISTENCY</u>	<u>COHESION (KSF)</u>
SILTS AND CLAYS	0-2	Very Soft	Less Than .25
	3-4	Soft	.25 To .5
	5-8	Firm	.50 To 1.0
	9-15	Stiff	1.0 To 2.0
	16-30	Very Stiff	2.0 To 4.0
	31-50	Hard	4.0 And Higher
	Over 50	Very Hard	

SYMBOLS

●	Standard Penetration Resistance in Blows Per Foot		Split Spoon Sample
●	Standard Penetration Resistance in Number of Blows (50) Required to Drive the Spoon a Number of Inches (5)		Undisturbed Sample Extruded in Field
			Undisturbed Sample Confined in Sampling Tube
⊖	Unconfined Compressive Strength		Undisturbed Sample; No Recovery
⊗	Pocket Penetrometer Strength		Core Sample, 90% Recovery
⊕	Torvane Shear Strength		24 Hour Water Level
□	Vane Shear Strength		1 Hour or Less Water Level
Δ	Triaxial Shear Strength		
dd	Dry Density		
mc	Moisture Content		

TEST BORING RECORD

CONESION - 100 PSI

PENETRATION - BLOWS PER FOOT

5 10 15 20 30 40 60 80 100

ELEV.	DEPTH FEET	DESCRIPTION	s	dd	pt	mc	0	5	10	15	20	30	40	60	80	100
34.27	0.0	Black Silty CLAY, Plastic, Iron Nodules, Friable (CL)														
28.27	6.0	Reddish Brown and Gray Mottled CLAY, Plastic, Friable, Calcareous Nodules, Carbonaceous Materials (CL)														
16.27	18.0	Reddish Brown Silty CLAY (CL) Grading To Very Silty Red SAND (SM-SC), Moist														
11.27	23.0	Gray and Brown Mottled Silty CLAY, Slickensides, Wet (CL)														
9.27	25.0	Boring Terminated at 25.0 Feet.														

REMARKS:

Piezometer Installed.
Screened Interval 18-23'

DRILLED BY S.H.

LOGGED BY EAS

CHECKED BY DRP

BORING NUMBER P-1

DATE STARTED 2/15/85

DATE COMPLETED 2/15/85

JOB NUMBER HT-1286

LAW ENGINEERING

TEST BORING RECORD

CONESION - 100 PSI

PENETRATION - BLOWS PER FOOT

ELEV.	DEPTH FEET	DESCRIPTION	1	2	3	4	5	10	15	20	30	40	60	80	100
34.75	0.0	Dark Black Silty CLAY, Plastic (CL)													
			X												
28.75	6.0	(FILL) Reddish Brown and Gray Mottled Silty CLAY, Plastic, Friable (CL)													
			X												
			X												
19.75	15.0	Becomes Moist													
			X												
16.75	18.0	Reddish Brown and Gray, Wet, Silty, Clayey SAND (SM-SC)													
14.75	20.0	Gray, Plastic, Silty CLAY (CL)													
			X												
9.75	25.0	Boring Terminated at 25.0 Feet													

REMARKS:
Piezometer Installed.
Screened Interval 20 - 25'

DRILLED BY SJL
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-2
DATE STARTED 2/14/85
DATE COMPLETED 2/14/85
JOB NUMBER HT-1286

PENETRATION - BLOWS PER FOOT

5 10 15 20 30 40 60 80 100

[illegible]

LAW ENGINEERING



TEST BORING RECORD

CONESION - 100 psf

PENETRATION - BLOWS PER FOOT

5 10 15 20 30 40 60 80 100

[illegible]

REMARKS:

Piezometer Installed.
Screened Interval 18 - 23'

DRILLED BY SJI
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-4
DATE STARTED 2/16/85
DATE COMPLETED 2/16/85
JOB NUMBER HT-1286

LAW ENGINEERING
HOUSTON TEXAS

TEST BORING RECORD

COHESION - 100 PSI

PENETRATION - BLOWS PER FOOT

ELEV.	DEPTH FEET	DESCRIPTION	S	dd	PI	MC	0	5	10	15	20	30	40	60	80	100
34.55	0.0	Black and Brown Silty CLAY (CL), with Some Sand Layers														
		Black and Gray Silty CLAY (CL) with Shells, Black Grit, Leaves														
18.55	16.0	(FILL)														
		Reddish Brown Silty Sandy and Clayey Silty SAND (SC)														
13.55	21.0	Gray Silty CLAY (CL), Friable, with Calcareous Zones ($\frac{1}{2}$ - 1 inch)														
11.55	23.0															
		Boring Terminated at 23.0 Feet.														

REMARKS:

Piezometer Installed.
Screened Interval 18 - 23'

DRILLED BY SJI
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-5
DATE STARTED 2/16/85
DATE COMPLETED 2/16/85
JOB NUMBER HT-1286

TEST BORING RECORD

CONESION - 100 PSI
PENETRATION - BLOWS PER FOOT
5 10 15 20 30 40 60 80 100





ELEV.	DEPTH FEET	DESCRIPTION																		
32.23	0.0	Black and Orange Mottled Silty CLAY (CL)	X																	
		Grayish Black Crumbly Silty CLAY (CL)	X																	
18.23	14.0	(FILL)	X																	
		Gray and Reddish Brown Silty CLAY (CL), Friable with Calcareous Nodules																		
14.23	18.0	Reddish Brown, Silty SAND (SM) and Clayey SAND (SL)	X																	
12.23	20.0	Very Wet	X																	
11.23	21.0	Gray Silty CLAY (CL), Plastic,	X																	
10.23	22.0	Friable																		
		Boring Terminated at 22.0 Feet																		

REMARKS:
Piezometer Installed.
Screened Interval 17 - 22'

DRILLED BY SJL
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-6
DATE STARTED 2/18/85
DATE COMPLETED 2/18/85
JOB NUMBER HT-1286

TEST BORING RECORD

		CONESION - 100 PSI PENETRATION - BLOWS PER FOOT																	
ELEV.	DEPTH FEET	DESCRIPTION	S	dd	PI	MC	0	5	10	15	20	30	40	60	80	100			
34.07	0.0	Reddish Brown, Black, and Brown Silty CLAY, (CL) With Some Sand, and Gravel, Plastic																	
22.07	12.0	(FILL) Reddish Brown and Gray Mottled Silty CLAY, (CL), Plastic, with Calcareous Nodules																	
16.07	18.0	Reddish Brown Silty, Clayey SAND (SM-SC)																	
13.57	20.5	Grayish Green Silty CLAY (CL)																	
	22.0	with Calcareous Nodules																	
		Boring Terminated at 22.0 Feet.																	

REMARKS:

Piezometer Installed.
Screened Interval 17 - 22'

DRILLED BY SJI
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-7
DATE STARTED 2/18/85
DATE COMPLETED 2/18/85
JOB NUMBER HT-1286

TEST BORING RECORD

ELEV.	DEPTH FEET	DESCRIPTION	S	dc	PI	mc	0	CONESION - 100 PSI PENETRATION - BLOWS PER FOOT										
								5	10	15	20	30	40	60	80	100		
33.65	0.0	Black Silty CLAY (CL)																
27.65	6.0	Gray and Reddish Brown Mottled Silty CLAY (CL), with Calcareous Nodules																
20.65	13.0	Slickensides, Plastic																
15.65	18.0	Reddish Brown Sandy CLAY (SC)																
13.65	20.0	Grading to Silty, Clayey SAND No Recovery 20-22' (SM-SC)																
11.65	22.0	Brownish Gray Silty CLAY (CL), Plastic, Slightly Friable, with																
9.65	24.0	Calcareous Nodules																
		Boring Terminated at 24.0 Feet.																

REMARKS:

Piezometer Installed.
Screened Interval 18 - 23'.

DRILLED BY SJI
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-8
DATE STARTED 2/19/85
DATE COMPLETED 2/19/85
JOB NUMBER HT-1286

TEST BORING RECORD

CONESION - 100 PSI
PENETRATION - BLOWS PER FOOT
5 10 15 20 30 40 60 80 100

ELEV.	DEPTH FEET	DESCRIPTION	s	di	PI	Mc	0	5	10	15	20	30	40	60	80	100
34.69	0.0															
		Black Silty CLAY (CL), w/ Gravel Chunks	X													
26.69	8.0	Brown and Gray Mottled Silty CLAY (CL), Plastic, Friable	X													
			X													
16.69	18.0	Brownish Red Sandy CLAY (SC)	X													
14.69	20.0	Brownish Red Very Silty SAND (SM)	X													
12.69	22.0	Gray Silty Clay (CL)	X													
10.69	24.0	Boring Terminated at 24.0 Feet														

REMARKS:

Piezometer not installed
in this boring.

DRILLED BY SJL
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-9
DATE STARTED 2/19/85
DATE COMPLETED 2/19/85
JOB NUMBER HT-1286

LAW ENGINEERING

[illegible]

PENETRATION - BLOWS PER FOOT

PENETRATION - BLOWS PER FOOT
5 10 15 20 30 40 60 80 100

[illegible]

DRILLED BY SJL
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER P-10
DATE STARTED 2/20/85
DATE COMPLETED 2/20/85
JOB NUMBER HT-1286

PENETRATION - BLOWS PER FOOT

5 10 15 20 30 40 60 80 100

Figure 1

LOGGED BY EAS

DATE STARTED 2/19/85

JOB NUMBER HT-1286

TEST BORING RECORD

ELEV.	DEPTH FEET	DESCRIPTION	S	M	PI	MC	0	CONESION - 100 PSI PENETRATION - BLOWS PER FOOT										
								5	10	15	20	30	40	60	80	100		
-8.61	43.0	Becomes Gray and Brown Mottled	X															
			X															
-18.61	53.0	Gray Silty, Sandy CLAY (SC)	X															
-20.61	55.0	Gray and Reddish Brown Silty CLAY (CL), Friable, Carbonaceous Matter, Sand Pockets	X															
-25.61	60.0	Boring Terminated at 60.0 Feet.																
														</				

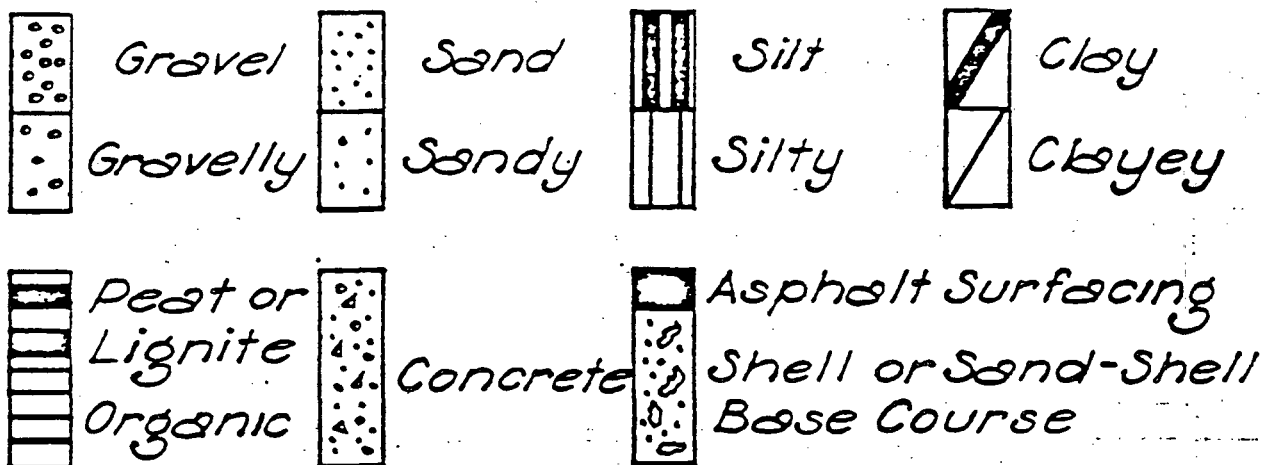
REMARKS:

Type III Well Installed
6" Casing Set From Ground
Surface to 26.0' Screen Set
at 50.0' - 55.0'.

DRILLED BY SJI
LOGGED BY EAS
CHECKED BY DRP

BORING NUMBER EO-4
DATE STARTED 2/19/85
DATE COMPLETED 2/21/85
JOB NUMBER HT-1286

Basic Symbols



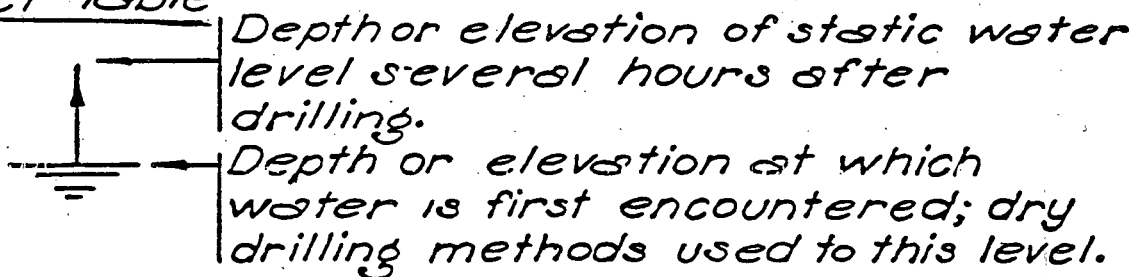
Consistency

V.S. - Very Soft
 S. - Soft
 M. - Medium
 F. - Firm (Stiff)
 V.F. - Very Firm
 H. - Hard

Color

Bl. - Black Y. - Yellow
 B. - Lt. Blue T. - Tan
 Br. - Brown W. - White
 G. - Gray
 Gr. - Green
 R. - Red

Water Table



Type of Drilling

H.A. Hand Auger
 M.A. Machine Auger

C.B. Core Boring
 W.B. Wash Boring

Test Results

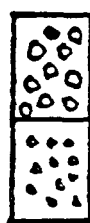
LL = % Moisture at Liquid Limit
 PL = % Moisture at Plastic Limit
 PI = LL - PL
 SL = % Moisture @ Shrinkage Limit
 LS = % Linear Shrinkage (LL to SL)
 L = Lateral Stress in Compressive Test (Minor Principal Stress)
 V-L = Applied Vertical Stress @ Failure (Principal Stress Difference)

ϕ & c = Angle of Friction & Cohesion Value from Confined Compressive Tests.

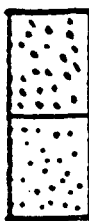
STANDARD SOIL SYMBOLS AND NOMENCLATURE

Southern Inspection Service, Inc.
 Frederick A. Harris
 Soils Engineer

DEPTH IN FEET	HOLE NO. 4 72" AUGER G + 50 18 + 00 20.20'	NATURAL MOISTURE CONTENT	DRY DENSITY	SOIL CONSTANTS			UNCONFINED COMP. STRENGTH	ALLOWABLE BEARING CAPACITY		PROBABLE SETTLEMENT
				LL	PL	PI		PSF	PSF	
		%	LB/CF	%	%	%	PSF	PSF	IN.	
0	MEDIUM BLACK SANDY CLAY	26.4		56.4	27.5	25.6				
5	STIFF YELLOW-BLUE SANDY CLAY	16.8	96.8	35.6	17.5	18.1	2460	3100		
10	STIFF R.B. SA. CL. MOIST RED-BLUE SILTY CLAYEY SA.	23.3	101.0				1900	2380		
15	WET RED SILTY SAND									
20	STIFF YELLOW-BLUE SANDY CLAY	24.6	97.4				4320	5400		
First water encountered at 7.0 ft. Hole caving 8 to 11 ft. Static water level at 6 ft. after 2 hrs.										
FOUNDATION INVESTIGATION LUBRIZOL CORP. 2800 PARK TENIS LOG AND SUMMARY OF RESULTS - SOUTHERN INSPECTION SERVICE INC. 3206 HOUSTON AVE. HOUSTON TEXAS										

BASIC SYMBOLS

Gravel



Sand



Silt



Clay

Peat or
Lignite

Concrete



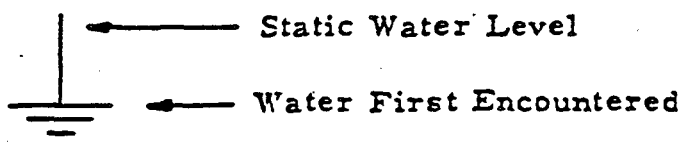
Asphaltic Paving

Shell or Sand-Shell
Base CourseCONSISTENCY

V.S. - Very soft
S. - Soft
M. - Medium
F. - Firm (stiff)
V.F. - Very firm
H. - Hard

COLOR

Bl.	- Black	Y.	- Yellow
B.	- Blue	T.	- Tan
Br.	- Brown	W.	- White
G.	- Gray		
Gr.	- Green		
R.	- Red		

WATER TABLETEST RESULTS

LL - Liquid Limit
PL - Plastic Limit
PI - LL - PL
SL - Shrinkage Limit
LS - Linear Shrinkage
L - Lateral Stress
V - Vertical Stress

ϕ - Angle of Internal Friction
C - Cohesive Strength
PP - Pocket Penetrometer Reading
BPF - Blows per Foot

STANDARD SOIL SYMBOLS
AND NOMENCLATURE

SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas
Frederick A. Harris Soils Engineer

C+00, 20+00		SOUTHERN INSPECTION SERVICE, INC.									
Depth in Feet	Elev. in Feet	HOLE NO.29 Surf. Elev. = EL+ 33.25' Location C+00 20+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Med. Gray Sandy Clay	23.5		43	20	23		1.5		
5		Firm Yellow-G. Sandy Clay	22.1		53	18	35		2.5		
		Firm Yellow-Blue Sandy Clay	25.0						2.2		
			27.9	99				2,350	2.7		2,930
10		Medium Yellow-Blue Clayey Sand	24.0	106				2,170	1.9		2,720
15		Firm Red-Blue Clay	35.0	89				2,410	2.0		3,000
			24.2	100				3,000	3.2		4,500
20		Ground Water Encountered at 13.0 ft. Depth									

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
 Lubrizol Corporation Plant Expansion
 Deer Park, Texas
 LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
 3206 Houston Ave. Houston, Texas
 Frederick A. Harris, Soils Engineer

Depth, in Feet	Elev. in Feet	Location
		HOLE NO. 30
		Surf. Elev. =
		EL+32.42'
		E+00
		20+00

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS
SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas
Frederick A. Harris Soils Engineer

Ground Water Encountered at 11.0 ft. Depth

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas
Frederick A. Harris Soils Engineer

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO. 33 Surf. Elev. = <i>EL+31.40'</i> Location F+00 21+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Firm Gray Sandy Clay	22.5					2.0			
		Hard Yellow-G. Sandy Clay	19.7		58	17	41	4.2			
5		Firm Yellow-Blue Sandy Clay	20.9					3.8			
			27.2	98				3,660	2.4	4,570	
10		Medium Y-B Clayey Sand	23.6	101				1,930	1.6	2,410	
		Firm Yellow-Blue Sandy Clay	31.2	92				2,870	2.8	3,600	
15		Firm Red-Blue Joint Clay	23.6	103				4,410	3.0	5,500	
		Wet Red-Blue Clayey Sand	24.7					0.6			
20											
		</									

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas
Frederick A. Harris Soils Engineer

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO. 34 Surf. Elev. = <i>EL+33.68'</i> Location C+00 22+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
						%	PCF	%	%	%	PSF
0		Med. Gray Sandy Clay	20.4						1.7		
5		Firm Yellow-G Sandy Clay	22.8						2.7		
		Firm Red-Blue Sandy Clay	21.0						3.0		
10		Firm Yellow-Blue Sandy Clay	16.5	115				6,250	3.8		7,800
			21.7	108				2,410	2.0		3,000
15		Firm Red-Blue Clayey Sand	24.3	98				1,820	2.1		2,300
			29.6	93				2,410	3.0		3,000
20		Ground Water Encountered at 14.0 ft Depth									

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas
Frederick A. Harris Soils Engineer

Depth in Feet	Elev. in Feet	HOLE NO. 35 Surf. Elev. = EL+32.65' Location E+00 22+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
					%	PCF	%				
0		Med. Gray Sandy Clay	30.1						1.5		
		Firm Yellow-G Sandy Clay	29.9						3.8		
5		Firm Yellow-Blue Sandy Clay	23.5						3.1		
			23.2	106				4,200	3.7		5,250
10			22.0	107				2,610	2.2		3,260
15		Firm Red-Blue Joint Clay	26.0	101				3,610	2.8		4,500
		Firm Red Clayey Sand	20.9	103				2,410	3.1		3,000
20		Wet Red Clayey Sand	26.2						0.5		
Ground Water Encountered at 15.0ft. Depth											

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.

3206 Houston Ave. Houston, Texas

Soils Engineer

Depth in Feet	Elev. in Feet	HOLE NO. 36 Surf. Elev. = <i>EL+33.46'</i> Location F+70 22+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Med. Gray Sandy Clay	33.8						1.2		
		Firm Yellow-G Sandy Clay	31.0						3.8		
5		Firm Yellow-Blue Sandy Clay	22.4						3.2		
			18.7	111				4,650	3.8		5,810
10		Firm Yellow-Blue Clayey Sand	23.8	101				1,920	1.6		2,400
		Firm Red-Blue Joint Clay	25.6	102				3,760	3.0		4,700
15		Firm Red Clayey Sand	23.9	101				2,010	2.6		2,500
20		Ground Water Encountered at 16.0 ft. Depth									

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas

LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.

3206 Houston Ave.

Houston, Texas

Frederick A. Harris

Soils Engineer

Depth in Feet	Elev. in Feet	HOLE NO. 37 Surf. Elev. = EL+ 33.42' Location D+00 24+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Firm Gray Sandy Clay	28.8		65	20	45		2.5		
		Firm Yellow-B Sandy Clay	25.8		53	17	36		2.2		
5		Firm Red-Blue Sandy Clay	23.3						2.2		
			25.6	100				3,010	2.9		3,750
10		Firm Yellow-Blue Sandy Clay	24.2	105				3,130	2.4		3,910
			22.3	106				3,900	2.4		4,900
15		Firm Red-Blue Joint Sandy Clay	25.2	104				3,800	2.9		4,750
20		Firm Yellow-B Clayey Sand	22.0	103				1,800	2.2		2,250
		Ground Water Encountered at 19.0 ft. Depth									

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO.38 Surf. Elev. = <i>EL+ 33.60</i> Location F+00 24+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Med. Gray Sandy Clay	46.6					1.0			
		Firm Gray Sandy Clay	28.6					2.4			
5		Firm Yellow-G Sandy Clay	28.2		65	22	43	2.7			
		Firm Red-Blue Sandy Clay	25.9	97				3,190	3.2	4,000	
10		Firm Yellow-B Sandy Clay	20.0	109				3,560	2.9	4,450	
		Medium Y-B Clayey Sand	23.2	105				1,810	1.6	2,260	
15		Firm Red-Blue Joint Clay	25.4	102				3,830	3.6	4,800	
20		Firm Red-Blue Clayey Sand	22.4	103				1,810	1.8	2,260	
Ground Water Encountered at 18.0 ft. Dept.											

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
Lubrizol Corporation Plant Expansion
Deer Park, Texas
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
3206 Houston Ave. Houston, Texas
Frederick A. Harris, Soils Engineer

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO. 39 Surf. Elev. = <i>EL+34.21'</i> Location C+00 26+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0		Firm Yellow-G Sandy Clay	20.3					2.7			
		Firm Yellow-B Sandy Clay	23.1					2.6			
5		Firm Red-Blue Sandy Clay	23.9		53	20	33		2.8		
		Firm Yellow-Blue Sandy Clay	23.0	107				4,450	3.6	5,570	
10			22.8	104				4,100	2.7	5,120	
		Firm Yellow-Blue Clayey Sand	24.8	101				2,120	2.8	2,650	
15		Firm Red-Blue Joint Clay	26.7	100				3,770	3.8	4,710	
20			28.1	97				3,310	3.4	4,130	
Ground Water Encountered at 13.0 ft. Depth											

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
 Lubrizol Corporation Plant Expansion
 Deer Park, Texas
 LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
 3206 Houston Ave. Houston, Texas
 Frederick A. Harris Soils Engineer

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO. 40 Surf. Elev. = EL+ 32.96' Location E+00 26+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Firm Gray Sandy Clay	28.4						2.3		
			28.9						2.1		
5		Firm Yellow-B Sandy Clay	21.2						3.1		
		Firm Red-Blue Sandy Clay	28.1	101				3,100	2.9		3,880
10		Firm Yellow-Blue Sandy Clay	22.1	109				4,100	3.9		5,120
			25.9	91				2,410	2.3		3,000
15		Firm Red-Blue Joint Sandy Clay	27.6	103				3,700	3.7		4,620
20		Wet Red Clayey Sand	28.6						0.2		
Ground Water Encountered at 18.0 ft. Depth											

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
 Lubrizol Corporation Plant Expansion
 Deer Park, Texas
 LOG AND SUMMARY OF RESULTS
 SOUTHERN INSPECTION SERVICE, INC.
 3206 Houston Ave. Houston, Texas

SOUTHERN INSPECTION SERVICE, INC.

DEPTH IN FEET	HOLE NO. 45 SURF. ELEV. LOCATION: 1 + 23.5 15 + 96.5	MOISTURE CONTENT	DRY DENSITY	SOIL CONSTANTS (ATTERBERG LIMITS)			UNCONFINED COMPRESSIVE STRENGTH	PENETRATION RESISTANCE		ALLOWABLE BEARING
				LL	PL	PI				
		%,	PCF	%,	%,	%,	PSF	PP	BPF	PSF Δ
	Firm Dark Gray Silty Clay	23.9		53	19	34		2.6		
		25.6						2.6		
5	Firm to Medium Yellow-Lt. Gray Silty Clay with Caliche	21.9		29	16	13		2.5		
		22.5						1.6		
10	Medium Brown Silty Sand with Clay Lenses	22.7						1.3		
15	Firm Yellow-Lt. Gray Clay with Caliche	26.8	95				3010	3.0		3750
20		26.1						3.0		
25	Firm Yellow-Lt. Gray-Red Clay with Caliche	22.6	106				4680	3.0		5850
	Some water at 8' depth.									

Δ
FOR ISOLATED FOOTINGS AND
F.S. = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-
INGS 75% OF VALUES SHOWN.

FOUNDATION INVESTIGATION
LUBRIZOL WASTE WATER TANK
THE LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.

SOUTHERN INSPECTION SERVICE, INC.

DEPTH IN FEET	HOLE NO. 46 SURF. ELEV. LOCATION. 1 + 46.5 15 + 73.25			MOISTURE CONTENT	DRY DENSITY	SOIL CONSTANTS (ATTERBERG LIMITS)			UNCONFINED COMPRESSIVE STRENGTH	PENETRATION RESISTANCE		ALLOWABLE BEARING
						LL	PL	PI				
				%	PCF	%	%	%	PSF	PP	BPF	PSF Δ
				Medium Dark Gray Silty Clay	26.0					1.5		
				Firm Yellow-Lt. Gray Silty Clay	24.0					2.8		
5				Silty Clay with Caliche	24.0					3.3		
				Med. Yel.-Lt. Gray Silty Clay	23.0					1.9		
10				Med. Brown Clayey Silt	22.1	99			1330	1.7		1660
				Firm Yellow-Lt. Gray Clay	21.7	95			2890	2.8		3620
15												
					27.7					2.0		
20				Hard Red-Lt. Gray Clay	19.3	110			4300	4.3		5375
25												
				Water encountered at 8' depth.								

Δ
FOR ISOLATED FOOTINGS AND
F.S. = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-
INGS 75% OF VALUES SHOWN

FOUNDATION INVESTIGATION
LUBRIZOL WASTE WATER TANK
THE LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.

SOUTHERN INSPECTION SERVICE, INC.

SOUTHERN INSPECTION SERVICE, INC.											
DEPTH IN FEET		HOLE NO. 47 SURF. ELEV. LOCATION. 1 + 23.25 16 + 50	MOISTURE CONTENT	DRY DENSITY	SOIL CONSTANTS (ATTERBERG LIMITS)			UNCONFINED COMPRESSIVE STRENGTH	PENETRATION RESISTANCE		ALLOWABLE BEARING
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF Δ
		Firm Dark Gray Silty Clay	26.8		70	22	48		2.0		
		Firm Yellow-Lt. Gray Silty Clay	21.6						2.0		
5		with Caliche	23.8		47	18	29		2.4		
		Firm Yellow-Lt. Gray Sandy Clay	21.4						2.3		
10		Soft Brown-Gray Clayey Sand	25.5	100				1110	0.7		1390
		Firm Yellow-Lt. Gray Clay	26.8	95				3780	3.3		4100
15											
		Hard Yellow-Red-Lt. Gray Clay with Caliche	26.0					4700	4.3		5875
20											
		Firm Red-Lt. Gray Silty Clay with Caliche	23.6	98				3670	3.0		4600
25											
		Water encountered at 8' depth.									

**Δ FOR ISOLATED FOOTINGS AND
F.S. = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-
INGS 75% OF VALUES SHOWN.**

FOUNDATION INVESTIGATION
LUBRIZOL WASTE WATER TANK
THE LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 WESTGLEN, HOUSTON, TEXAS

SOUTHERN INSPECTION SERVICE, INC.

DEPTH IN FEET	HOLE NO. 48 SURF. ELEV. LOCATION. 1 + 00 15 + 73.25			MOISTURE CONTENT %	DRY DENSITY PCF	SOIL CONSTANTS (ATTERBERG LIMITS)			UNCONFINED COMPRESSIVE STRENGTH PSF	PENETRATION RESISTANCE		ALLOWABLE BEARING PSF Δ
						LL	PL	PI		PP	BPF	
						%	%	%				
	*											
	Firm to Medium Yellow-Lt. Gray Silty Clay	26.0								2.5		
		17.3								2.9		
		14.2								3.4		
	F. Br.-G. Cl. Silt	18.3								2.6		
10	Medium Brown Sandy Silt	21.2 21.9								1.3	14	2800
	Firm Yellow-Lt. Gray Clay	29.4	94						3020	3.0		3800
15												
	Firm Red-Gray Clay	22.1								3.5		
20		21.8	103						4810	3.5		6000
25	*Zero to 1' - Med. Dark Gray Silty Clay											
	Water encountered at 8.5' depth.											

Δ
FOR ISOLATED FOOTINGS AND
F.S. = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-

FOUNDATION INVESTIGATION
LUBRIZOL WASTE WATER TANK
THE LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO.44 Surf. Elev. = 24.45' Location 27+00 B+60	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0		Firm Dk. Gray Sandy Clay	19.4					3.0			
5		M. -F. Lt. Gray Silty Clay	24.2 22.7	99			1510	1.6 2.5		1900	
10		Firm Red Clay	22.3	105			1900	2.5		2360	
15		Firm Tan-Gray Silty Clay	24.7 22.9	105			2750	2.5 2.2		3440	
20		Med. -Firm Tan-Gray Clayey Sand	20.1 22.7	115			1040	1.7 3.0		1300	
25		Hard-Firm Red Clay	24.5 24.4 25.3 22.2 21.9	101			4210	4.0 3.7 3.5 2.8 3.3		5250	
30		Dense R. Sand								8000	
First water encountered at 14.0' depth. Static water level at 3.7' depth.											

*For isolated footings and F.S. = 3.0; allowable bearing for continuous footings 75% of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Aeration Lagoon
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

Depth in Feet	Elev. in Feet	HOLE NO. 45 Surf. Elev. = 34.29' Location 25+00 B+63	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Firm Dk. Gray Sandy Clay	15.9						3.8		
		Firm Tan- Gray Clay	25.4						3.3		
5			24.8	101				2260	2.1		2830
		Firm Red Clay with "Caliche"	26.1	101				3010	2.5		3750
10			17.8						3.3		
		Firm Tan- Gray Sandy Clay	20.1						2.3		
15			15.8	116				4740	3.0		5920
			19.7						3.0		
		Firm Red Clay	30.0						2.8		
20			23.4	103				4680	3.9		5850
		Layers of Firm R. Clay and Dense Red Sand	18.9	111				3720	3.1		4650
25			19.2						2.3		
30									1.9		
First water encountered at 20.0' depth. Static water level at 4.8' depth.											

*For isolated footings
and F.S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Aeration Lagoon
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

Elev. In Feet

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO.47 Surf. Elev. = Elev. 22.92 Location 24+56 F+30	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Med. Br. -Blk. Sa. Cl. Fill w/sh.	19.1	101				1730	1.7		2160
		M. -F. Black Sandy Clay	27.8						1.5		
5		with Chemicals	29.9		56	19	37		3.3		
			21.6	106				2870	2.8		3580
10		Firm Tan- Gray Silty Clay	23.3						2.8		
			20.9	107				3150	2.9		3940
15		Firm Red Clay with "Caliche"	20.6						3.5		
			22.8	106				3770	3.4		4720
20		Firm Red Clay	23.8						3.8		
			22.3	106				3370	3.4		4210
			20.0						2.5		
25		Dense Red Clayey Sand	21.6	108				1900	1.5		5000
			21.5						1.8		
30		First water encountered at 23.0' depth. Static water level at 14.6' depth.									

*For isolated footings
and F.S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Equalization Basin
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas

Depth in Feet	Elev. in Feet	HOLE NO.48 Surf. Elev. = 33.35' Location 25+56 E+42	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0		Hard Black Sandy Clay	21.8		30	14	16		4.4		
			30.6						4.0		
5		Firm Dark Gray Clay	23.5						2.5		
		Firm Red Clay w/ "Caliche" layer	25.3						3.3		
10		Firm Tan and Gray Clay	24.8						2.8		
			23.0						3.2		
			20.8						2.8		
15			21.9	108				3470	2.8		4340
20		Firm Red Clay	24.3						3.8		
			26.6	80				4200	3.5		5200
			24.6						3.6		
			22.3	102				3300	2.8		4125
25		Dense Red Sand	20.3						2.5		6300
No water encountered during drilling. Static water level at 10.6'.											

*For isolated footings
and F.S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Clarifier
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

Depth in Feet	Elev. in Feet	HOLE NO.49 Surf. Elev. = 33.71 Location 25+63 F+64	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0		Firm Black Sandy Clay & Shell Fill Chemical Soaked	27.5						2.3		
			22.0						3.7		
5		Firm Gray Clay	24.1						3.0		
			23.5						2.0		
10		Firm Tan & Gray Silty Clay with "Caliche"	20.5						2.8		
			19.3						3.5		
			18.9						3.5		
			22.7	96				3300	3.3		4125
15		Firm Red Clay	24.5	103				4490	3.8		5602
			24.5	96				2640	2.5		3271
			21.2						3.0		
			20.7						3.3		
20		Dense Red Clayey Sand	20.0						2.5		
Water encountered at 24.0' depth. Static water level at 14.3' depth.											

*For isolated footings
and F.S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Separator
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.-
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

Depth in Feet	Elev. in Feet	HOLE NO.50 Surf. Elev. = 22.77' Location 27+00 E+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0		Firm Dark Gray Sandy Clay	18.5		34	21	13		3.5		
			23.5						2.3		
5		Med. Light Gray Cl. w/organic	21.8	103				2146	2.4		2683
		Firm Tan Silty Clay	24.4	101				2030	2.7		2538
10		Firm Light Gray & Tan Clay w/Sand Layers	20.7						2.8		
			17.7	112				3686	3.4		4608
			20.9						2.8		
15			24.0	102				2549	3.7		3186
No water encountered during drilling. Static water level at 6.6 depth.											

*For isolated footings
and F.S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Future Buildings
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

SOUTHERN INSPECTION SERVICE, INC.											
Depth In Feet	Elev. In Feet	HOLE NO.51 Surf. Elev. = EL - 52.32' Location 27+00 F+00	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0		Firm Dark	16.4					4.0			
		Gray Sandy	31.6	91			2736	3.5		3420	
		Clay	23.9					2.5			
5											
		Firm Tan &	12.9					3.0			
		Gray Clay	24.7	104			2534	2.7		3168	
10		w/Sand	21.0					3.3			
		Pockets	24.1	103			2218	3.5		2773	
			22.8					3.0			
15											

*For isolated footings
and F. S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Future Buildings
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Frederick A. Harris Soils Engineer

Depth in Feet		HOLE NO. 52		Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
Elev. in Feet	Location	LL	PL			PI	PP	BPF				
		%	%			%				PSF	PSF*	
0		Medium Brown, Gray & Black Clay Fill	17.8						2.0			
1			18.2						1.5			
5			21.7						1.0			
6			17.9						1.5			
7			17.8						2.0			
10		Hard to Firm Tan & Gray Clay	16.2						4.5+			
11			20.9						3.8			
12		Firm Red Clay	24.1	102				3542	3.0			4428
13		Dense Red Clayey Sand	20.3						2.0			4450
14		Firm to Med. Tan & Gray Sandy Clay	20.4	105				2189	2.8			2736
15			18.2						1.3			
20		Dense Red Clayey Sand	17.8	109				1008	0.7			3920
21			19.2									
22		Water encountered at 23' depth. Static water level at 9.9' depth.										
*For isolated footings and F. S. = 3.0; allowable bearing for continuous footings 75% of values shown.												
FOUNDATION INVESTIGATION LUBRIZOL CORP. PLANT EXPANSION Clarifiers LOG AND SUMMARY OF RESULTS												
SOUTHERN INSPECTION SERVICE, INC. 8400 Westglen Dr. Houston, Texas Frederick A. Harris Soils Engineer												

Depth in Feet	Elev. in Feet	HOLE NO 53 Surf. Elev. = El. 32.06' Location 27+87 F+80	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI		PP	BPF	
			%	PCF	%	%	%	PSF			PSF*
0		Firm to Medium Gray, Tan & Red Clay and Sand Fill	17.7						2.5		
			17.3						1.3		
			16.3						1.7		
			15.5						1.5		
10	A	Firm Tan & Light Gray Sandy Clay	18.6						2.1		
			15.2						3.6		
			16.3						3.3		
15		Hard to Med. Red & Gray Clay w/Sand Pockets	21.8	105				4032	4.0		5040
			20.7	107				2117	1.8		2650
20		Dense Red Sand	18.2						1.5		8000
			24.4								
			20.3	107				965	1.2		7900
25		Firm Light Gray & Tan Silty Clay w/"Caliche"	17.3						3.8		
			Water encountered at 21.0' depth Static water level at 9.8' depth.								

*For isolated footings
and F.S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Clarifiers
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas

SOUTHERN INSPECTION SERVICE, INC.											
Depth in Feet	Elev. in Feet	HOLE NO54 Surf. Elev. = 32.00 Location 27+38 F+89	Natural Moisture Content	Dry Density	Soil Constants (Atterberg Limits)			Unconfined Compressive Strength	Penetration Resistance		Allowable Bearing
					LL	PL	PI				
			%	PCF	%	%	%	PSF	PP	BPF	PSF*
0 											

*For isolated footings
and F. S. = 3.0; allow-
able bearing for con-
tinuous footings 75%
of values shown.

FOUNDATION INVESTIGATION
LUBRIZOL CORP. PLANT EXPANSION
Clarifiers
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 Westglen Dr. Houston, Texas
Soils Engineers

SOUTHERN INSPECTION SERVICE, INC.

HOLE NO. 57
SURF. ELEV. 32.73
LOCATION.
26 + 90.0
E + 60

DEPTH IN FEET

		MOISTURE CONTENT	DRY DENSITY	SOIL CONSTANTS (ATTERBERG LIMITS)			UNCONFINED COMPRESSIVE STRENGTH	PENETRATION RESISTANCE		ALLOWABLE BEARING
				LL	PL	PI		PP	BPF	
		%	PCF	%	%	%	PSF			PSFA
	Medium Gray Clay Fill	23.0		51	19	32		1.8		
	Medium Gray Silty Clay	24.2	100	53	19	34	2050	1.5		2560
5	Medium to Firm Tan-Gray Silty Clay	21.0 20.0						1.3 2.0		
10	Firm Red-Tan Silty Clay with Caliche	22.3 21.4						2.8 2.5		
			105				3280			4720
15	Medium Brown-Gray Clay with Fine Sand Lenses	27.2	98				4230	1.0		5300
20	Firm Red-Gray Clay	21.9						2.0		3000
Water encountered at 12.5' depth.										

FOR ISOLATED FOOTINGS AND
F.S. = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-
INGS 75% OF VALUES SHOWN.

FOUNDATION INVESTIGATION
CLARIFIER AND STILLWELL - C.I.W.A. - HP773
LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.

SOUTHERN INSPECTION SERVICE, INC.

HOLE NO. 58
SURF. ELEV. 33.93
LOCATION:
27 + 57.0
E + 10

DEPTH IN FEET

MOISTURE
CONTENTDRY
DENSITYSOIL
CONSTANTS
(ATTERBERG
LIMITS)UNCONFINED
COMPRESSIVE
STRENGTHPENETRATION
RESISTANCEALLOWABLE
BEARING

%

PCF

LL

PL

PI

PSF

PP

BPF

PSF Δ

Hard to Firm
Gray Silty Clay

15.6

4.0

5

Firm Red-Tan
Silty Clay
with Caliche

22.2

2.5

19.5

2.8

10

18.1

111

3950

3.0

4930

15

Firm Brown-Gray
Silty Clay with
Fine Sand Layers

21.0

106

2470

2.0

3100

20

Firm Red-Gray
Clay

26.1

99

3010

2.5

3800

Water encountered at 12' depth.

Δ
FOR ISOLATED FOOTINGS AND
FS = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-
INGS 75% OF VALUES SHOWN.

FOUNDATION INVESTIGATION
CLARIFIER AND STILLWELL - C.I.W.A. - HP773
LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 WESTGLEN, HOUSTON, TEXAS
FREDERICK A. HARRIS SOILS ENGINEER

SOUTHERN INSPECTION SERVICE, INC.

SOUTHERN INSPECTION SERVICE, INC.										
DEPTH IN FEET	HOLE NO. 59 SURF. ELEV. 33.64 LOCATION. 27 + 85.0 E + 10	MOISTURE CONTENT	DRY DENSITY	SOIL CONSTANTS (ATTERBERG LIMITS)			UNCONFINED COMPRESSIVE STRENGTH	PENETRATION RESISTANCE		ALLOWABLE BEARING
				LL	PL	PI				
				%	PCF	%	%	%	PSF	PP
5	Firm to Hard Gray Silty Clay	15.0						4.5		
		25.6						2.0		
10	Firm Tan-Gray Clay	21.8	103				2070	2.3		2600
		20.3						2.0		
15	Firm Red-Tan Silty Clay with Caliche	22.4	103				2540	3.8		3200
20	Firm Brown-Gray Silty Clay with Fine Sand Lenses	22.7					2300	2.3		3000
	Firm Red-Gray Clay	21.4	104				4110	2.8		5100
Water encountered at 12' depth.										

Δ
FOR ISOLATED FOOTINGS AND
F.S. = 3.0; ALLOWABLE BEAR-
ING FOR CONTINUOUS FOOT-
INGS 75% OF VALUES SHOWN.

FOUNDATION INVESTIGATION
CLARIFIER AND STILLWELL - C.I.W.A. - HP773
LUBRIZOL CORPORATION - DEER PARK PLANT
LOG AND SUMMARY OF RESULTS

SOUTHERN INSPECTION SERVICE, INC.
8400 WESTGLEN, HOUSTON, TEXAS

LABORATORY PROCEDURES

PERMEABILITY (Falling Head Method)

The permeability of fine grained soils are determined by a falling-head permeability test. A sample of soil was first saturated by use of back pressure and then subjected to an initial head. As the water flowed through the sample, the time and loss in head was recorded and the permeability calculated. Results of this test are summarized in Table 1.

WELL INSTALLATION PROCEDURES

Nine piezometers and one monitoring well were installed in the vicinity of the equalization basin. Piezometer and well installation reports are included for each of these piezometers and the monitoring well.

Prior to installation of the piezometers a water sample was collected while the hollow stem auger was in place. One to three boring volumes were removed using a bailer. A water sample was then collected. Specific conductance and pH were measured at the site and separate water samples were collected for laboratory analysis. These samples were analyzed by Lubrizol personnel for iron and total organic carbon. The bailer was decontaminated by washing with Alconox, distilled water, acetone and another distilled water rinse between borings to avoid cross contamination.

The piezometers were constructed of 1 inch diameter Schedule 40 flush joint threaded PVC pipe. The screened interval was hand slotted. A filtered and washed sand consisting of Clemtex #2 specifications was used as the sand pack material around the screened interval. Sand was installed by pouring directly into the annular space between the piezometer and the hollow stem auger. Periodically during this process, the depth to sand was checked with a weighted object to insure proper backfilling of the piezometer. Bentonite pellets sealed the well directly above the sand pack for a thickness of 1 to 2 feet. A grout mix using Portland Type 1 cement and bentonite was used to seal the piezometer to the surface. A sakrite concrete cap was placed around the riser at the surface.

Monitor well EQ-4 was installed as a Type III well. The uppermost 26 feet was advanced using the hollow stem auger. Upon completion of sampling, Schedule 40, 6 inch diameter PVC casing was set and cemented in place. After a period of several days, drilling continued using a wash rotary process. During drilling, the bit knocked the 6 inch casing loose. The entire hole was grouted to recement the casing, and redrilled 24 hours later. The hole was completed using a 6" diameter bit to an appropriate depth and then 3" diameter schedule 40 PVC riser pipe and screen with threaded couplings set for the well. The screen of the well was obtained from the manufacturer with machined 0.01 inch slots spaced approximately at 1/4 inch intervals extending throughout the length of the screen. A centralizer was installed at the top of the screen to insure that the well was centered in the hole.

A filtered and washed sand consisting of Clemtex #2 specifications was used as the sand pack material around the screened interval. Sand was installed in the wells by pouring

it directly into the annulus space between the 3 inch diameter PVC and borehole wall. Periodically, the sand was tamped down with poles to insure proper backfilling around the screen.

Bentonite pellets sealed the well directly above the sand pack and grout mix using Portland Type I cement and bentonite was used to seal the well to the surface. The well was capped at the top and bottom with a PVC cap, and a 6 inch diameter protective PVC shroud was installed.

Between the drilling and developing of the monitoring wells, a steam cleaner with detergent was utilized to clean the drill rig, all tools, drill pipe, PVC pipe bits and downhole sampling devices of any contaminants that may have been present from previous borings.

The well was developed using an air lift technique. Rather than simply blowing out the well with large volumes of air as is done in many applications, this technique utilizes an air line placed downhole within a drop pipe. A one-way valve at the extreme bottom of the drop pipe permits flow into the drop pipe but none out. Water is lifted up out of the hole through the drop pipe. Essentially, this technique reduces the possibility of injecting air through the screen out into the formation. The possibility of changes in ground-water chemistry through stripping of volatile organics is minimized.

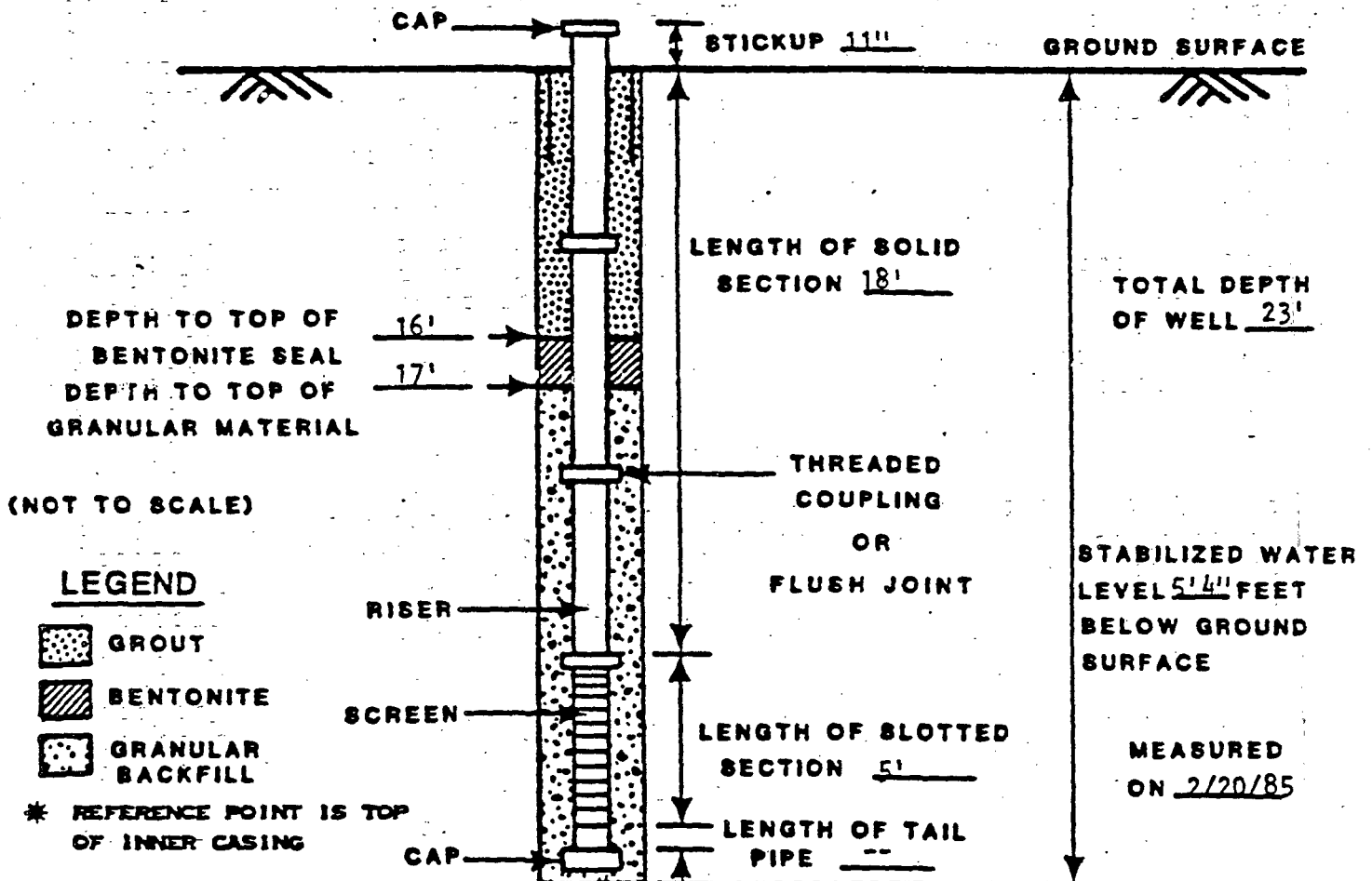
Pumping to develop the well continued for 4 hours until readings of pH and specific conductivity had stabilized and the water was free of fine material. This was performed in order that representative formation water, void of drilling fluids and cuttings, would be sampled from the well. Water level measurements were obtained from the wells in order to establish ground water gradients once water levels had stabilized. All ground water level information is reflected on the Site Potentiometric Map shown on Figure 7.

Slug tests were run in monitor wells EQ-1 and EQ-3. A 5 foot length of 2-inch ID PVC pipe was filled with sand and capped. This was then used as a slug of known volume which could be introduced into the well suddenly. When the slug was introduced suddenly, a sudden increase of water level occurred. Fall of the water well to its original level or to a very slow rate of recovery was monitored with a water level indicator. The slug was then quickly removed from the well to provide another set of data to check the first test. Data from the tests were analyzed by a method developed by Bouwer and Rice (1978) to produce permeability values.

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-1 INSTALLATION DATE 2/15/85
 LOCATION E + 19.0. 25 + 22.33
 GROUND SURFACE ELEVATION 34.27 REFERENCE POINT ELEVATION 35.19
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

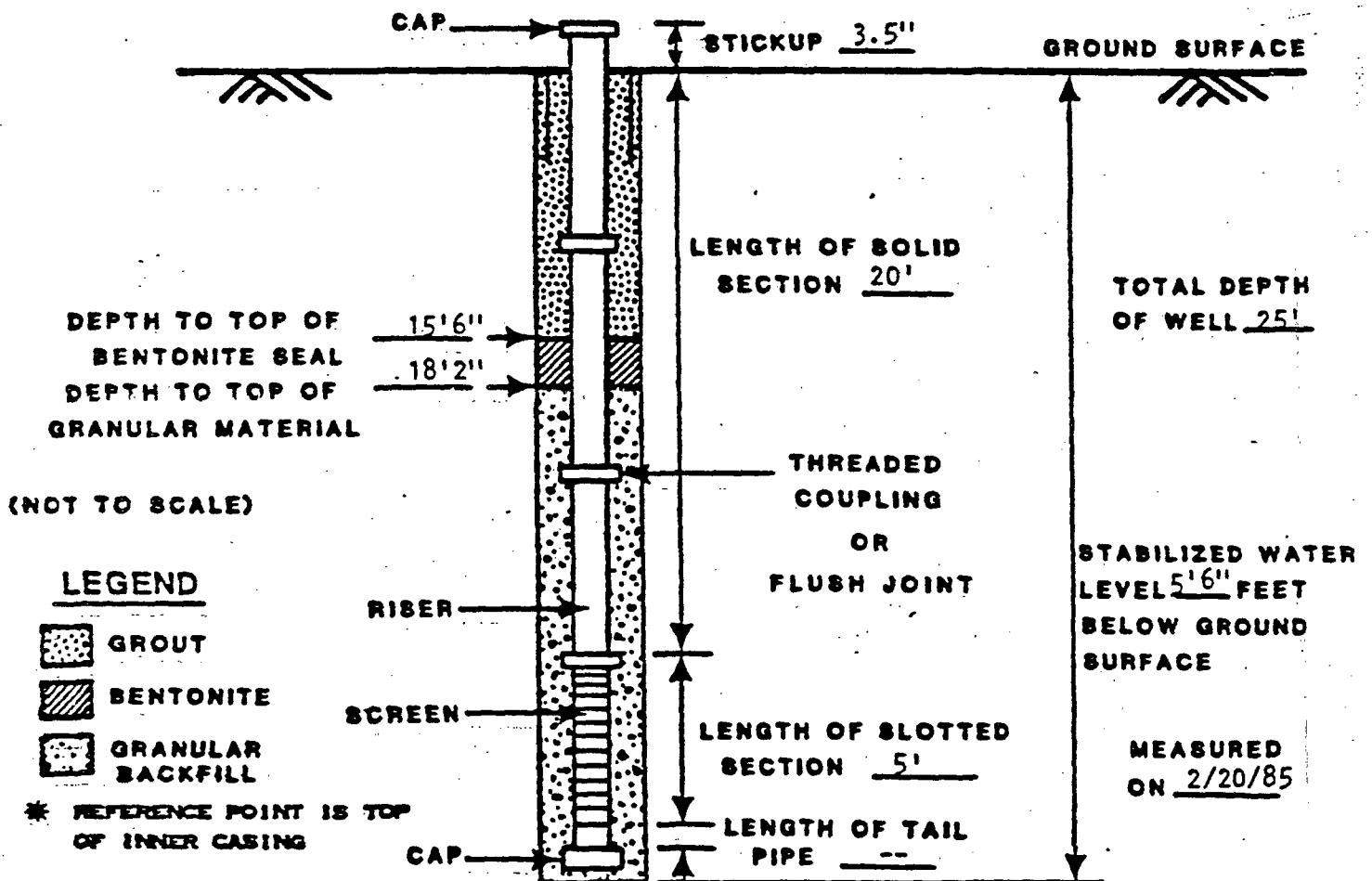


LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-2 INSTALLATION DATE 2/14/85
 LOCATION E + 19.0, 25 + 22.33
 GROUND SURFACE ELEVATION 34.75 REFERENCE POINT ELEVATION 35.04
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

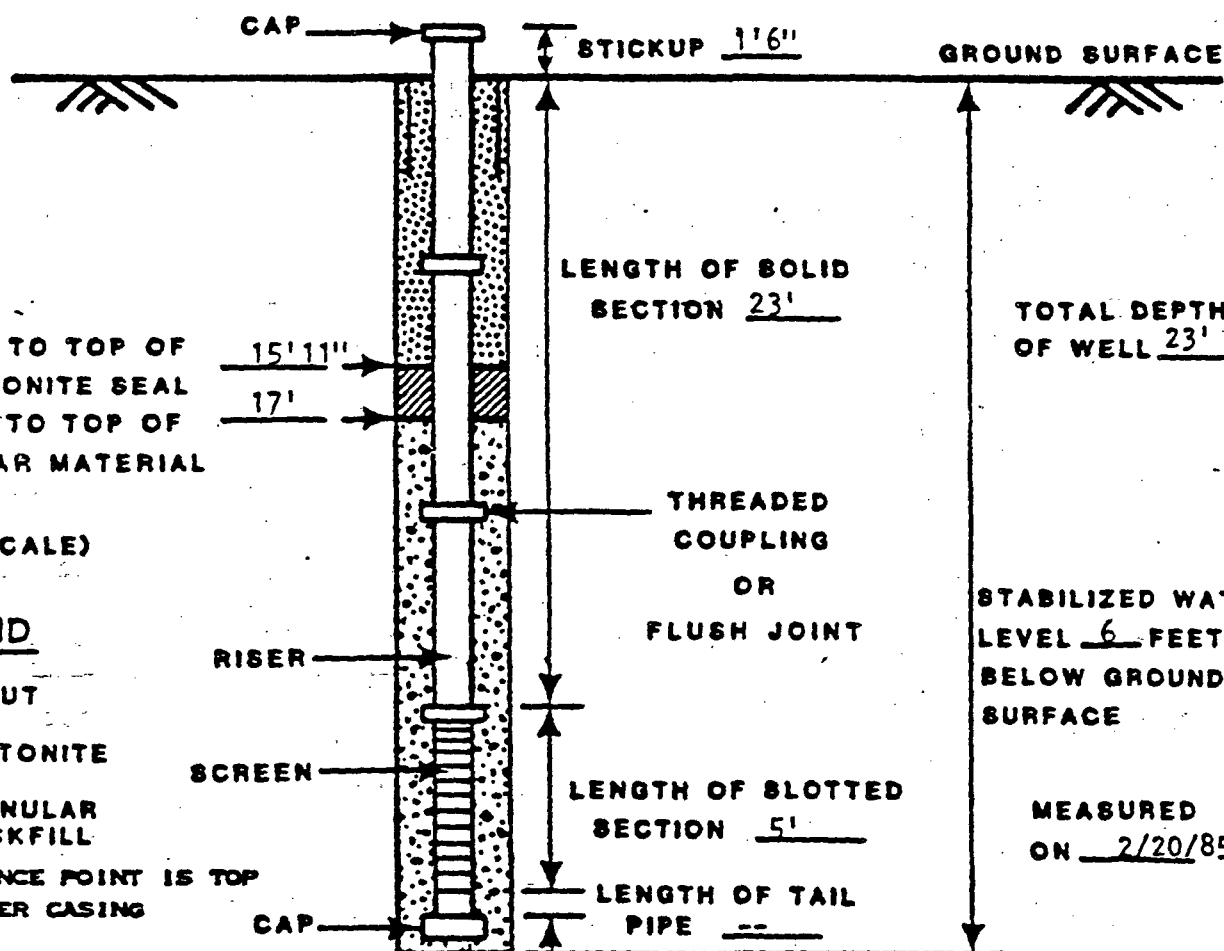


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 HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER P-3 INSTALLATION DATE 2/15/85
LOCATION F + 88.35, 26 + 22.15
GROUND SURFACE ELEVATION 33.47 REFERENCE POINT ELEVATION 34.97
GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETGO
BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
LOCK BRAND _____ FIELD REPRESENTATIVE _____
KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *



LEGEND

- GROUT
- BENTONITE
- GRANULAR BACKFILL

* REFERENCE POINT IS TOP OF INNER CASING



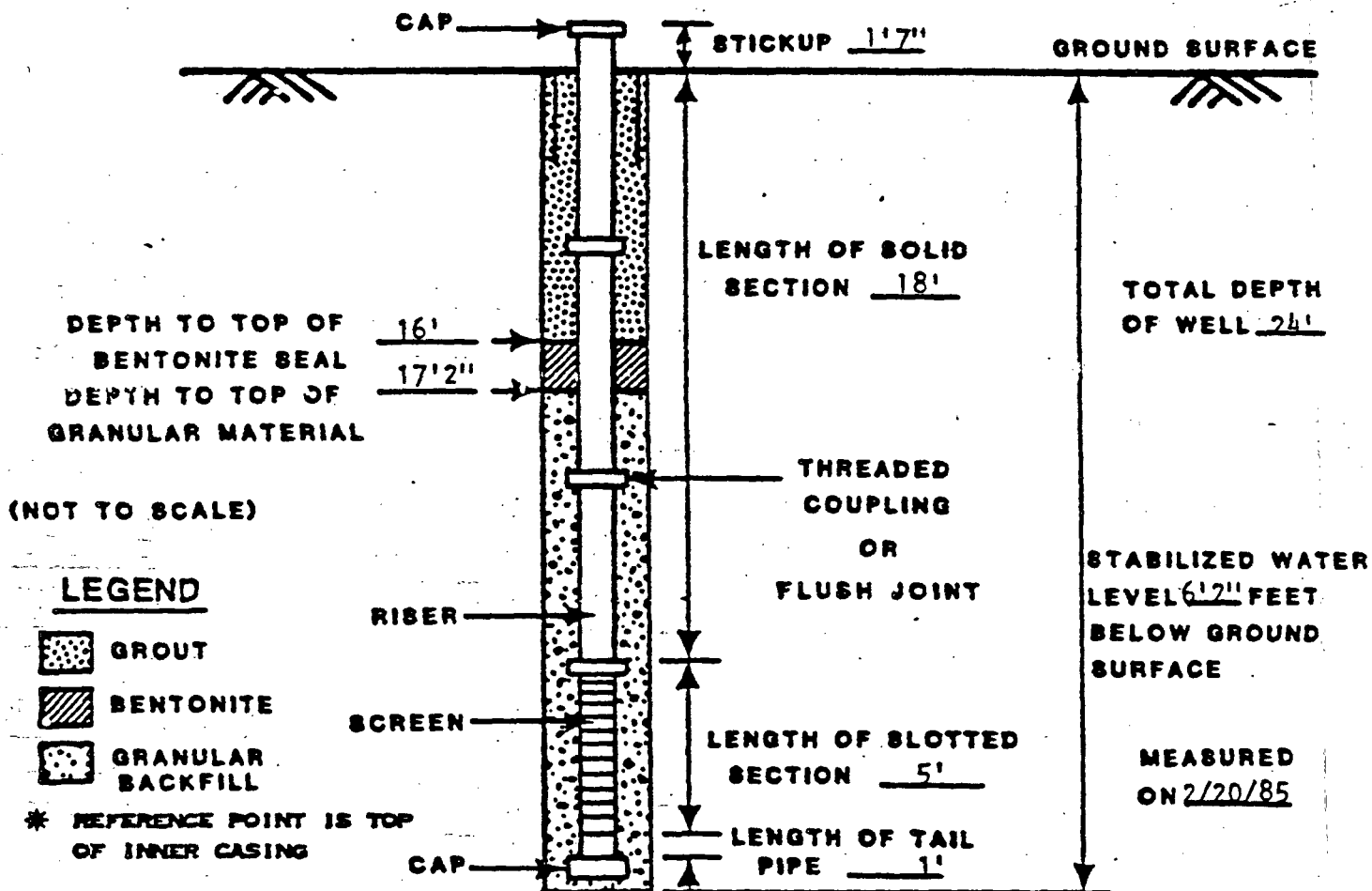
LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

MEASURED
ON 2/20/85

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-4 INSTALLATION DATE 2/16/85
 LOCATION G + 20.50, 25 + 64.15
 GROUND SURFACE ELEVATION 34.27 REFERENCE POINT ELEVATION 35.85
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING F. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

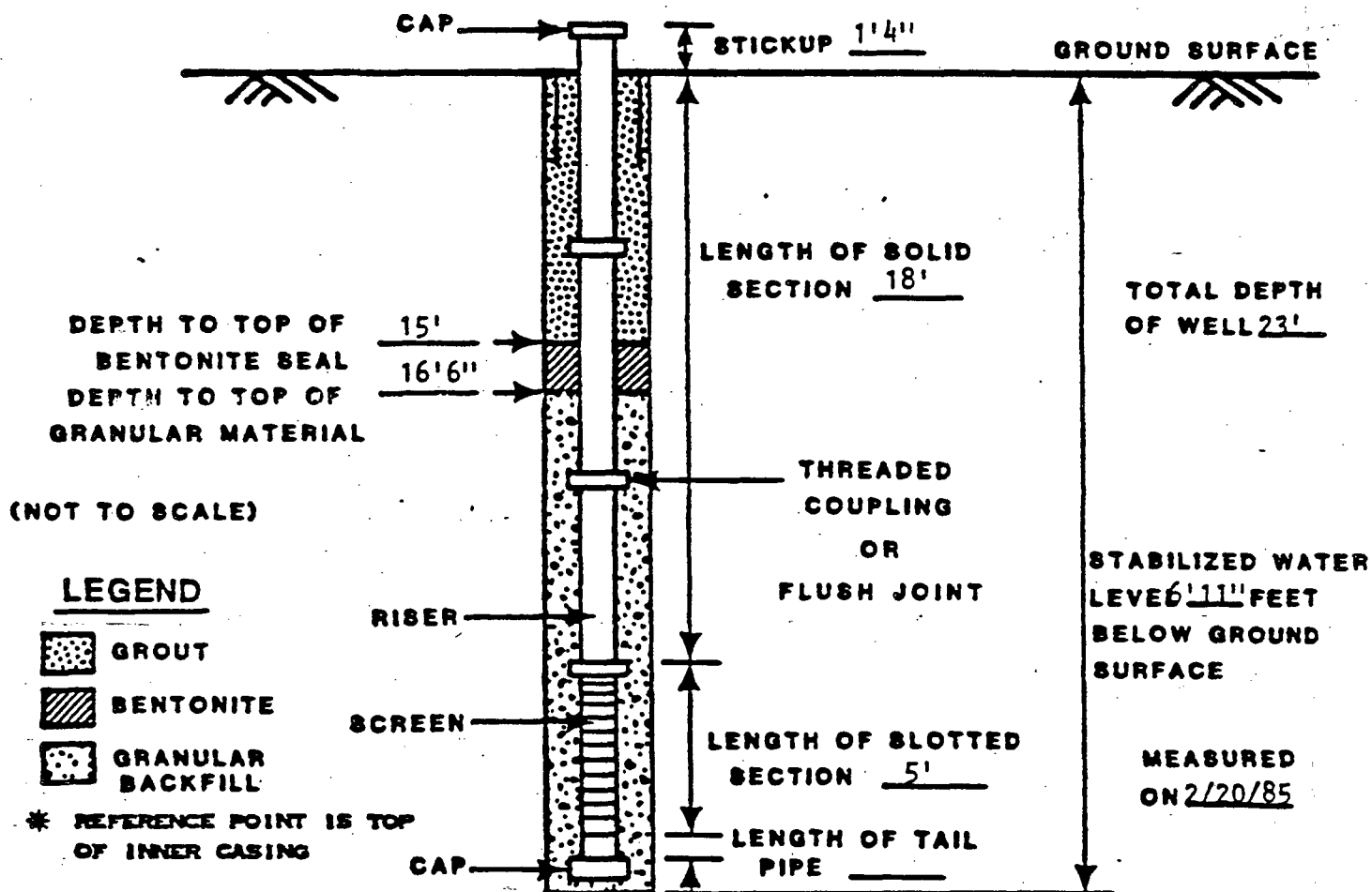


LAW ENGINEERING TESTING COMPANY
 HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-5 INSTALLATION DATE 2/16/85
 LOCATION G + 48.33, 23 + 48.0
 GROUND SURFACE ELEVATION 34.55 REFERENCE POINT ELEVATION 35.88
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

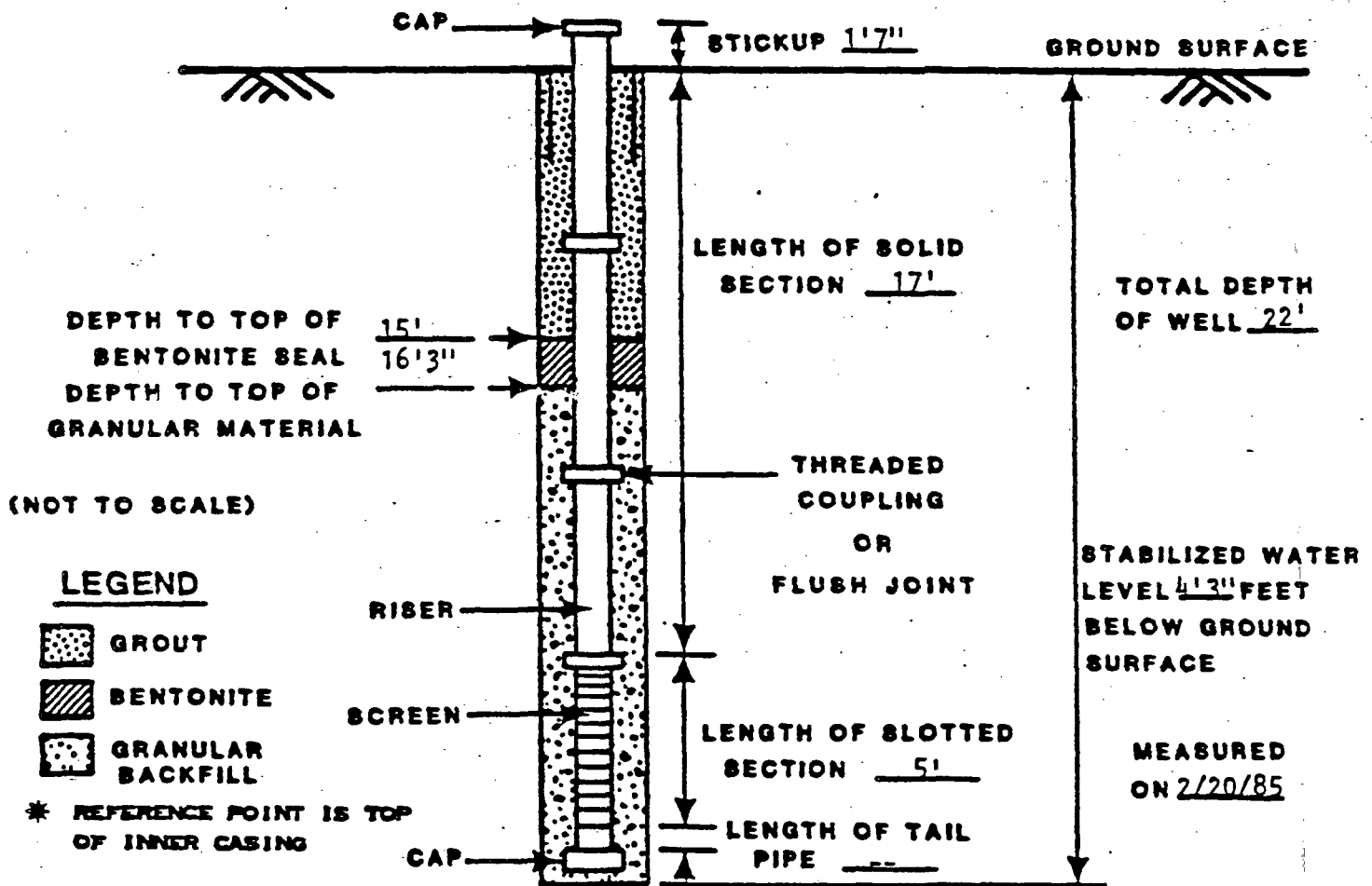


LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-6 INSTALLATION DATE 2/18/85
 LOCATION E + 93.75, 26 + 73.61
 GROUND SURFACE ELEVATION 32.23 REFERENCE POINT ELEVATION 33.81
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

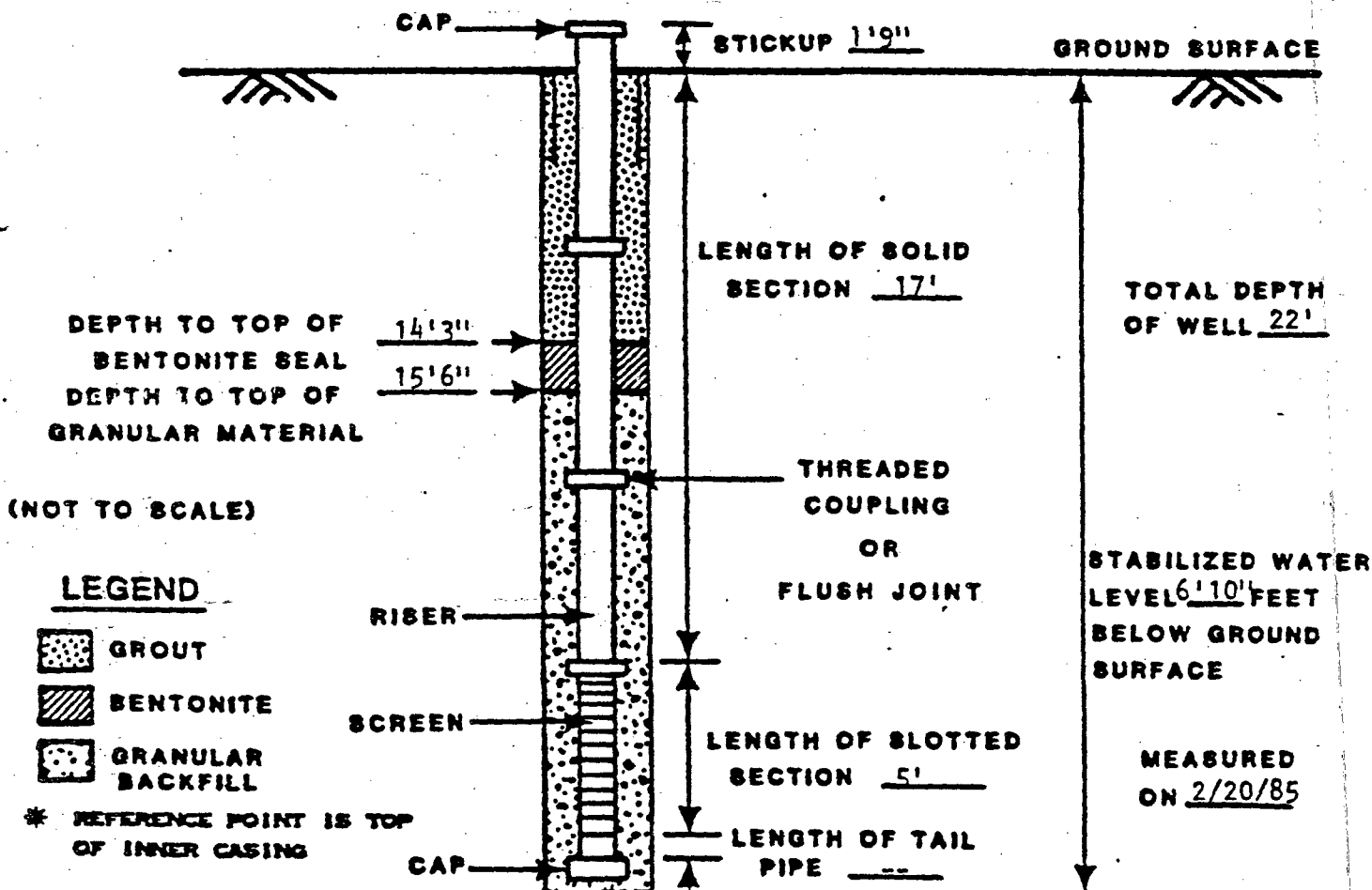


LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-7 INSTALLATION DATE 2/18/85
 LOCATION G + 48.33, 22 + 64.0
 GROUND SURFACE ELEVATION 34.07 REFERENCE POINT ELEVATION 35.82
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING F. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

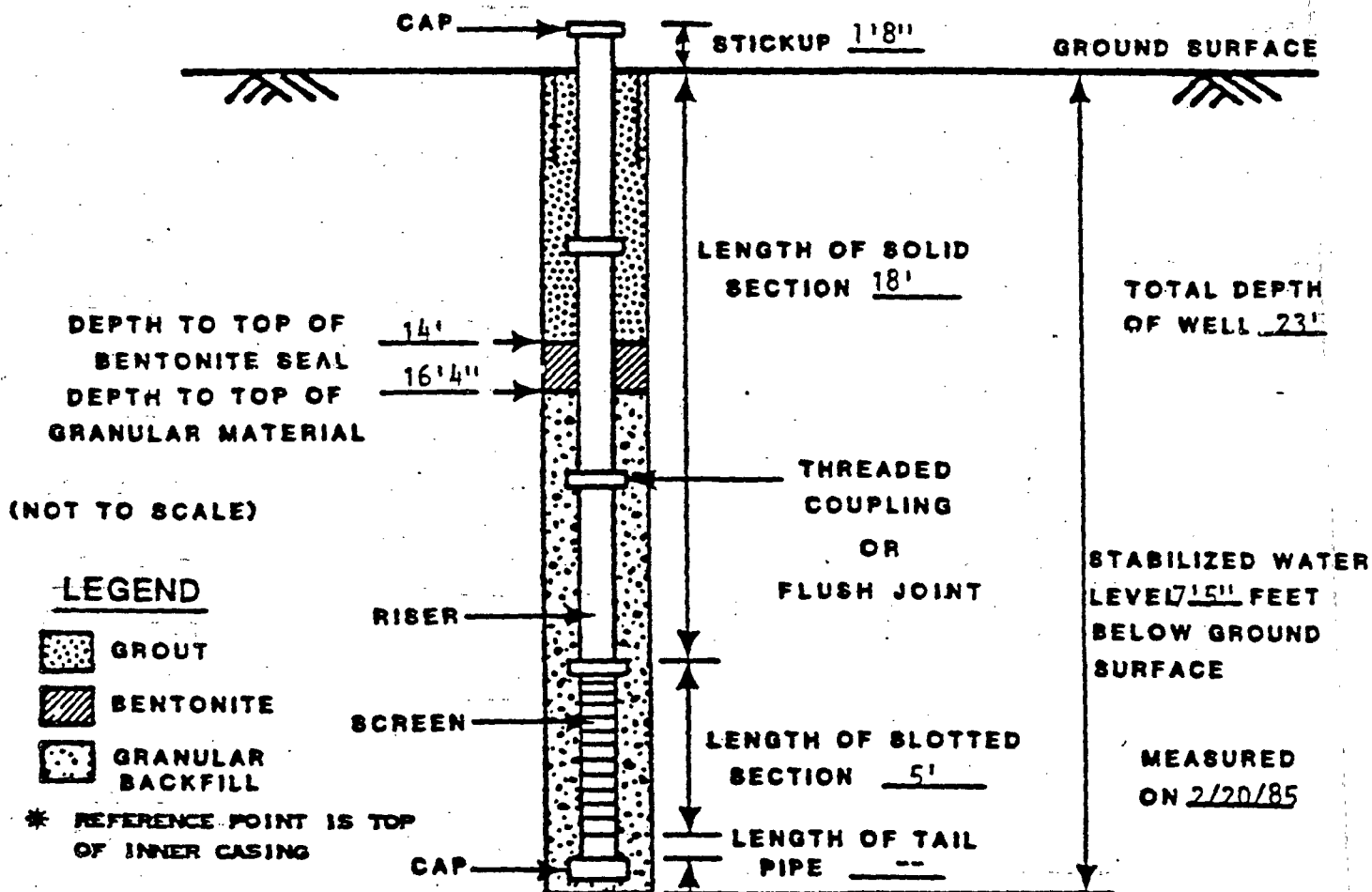


LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER P-8 INSTALLATION DATE 2/19/85
 LOCATION F + 93.75, 22 + 5.74
 GROUND SURFACE ELEVATION 33.65 REFERENCE POINT ELEVATION 35.32
 GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
 SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
 RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
 DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
 BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
 LOCK BRAND _____ FIELD REPRESENTATIVE _____
 KEY CODE/COMBINATION _____ SIZE/MODEL _____

REFERENCE POINT *

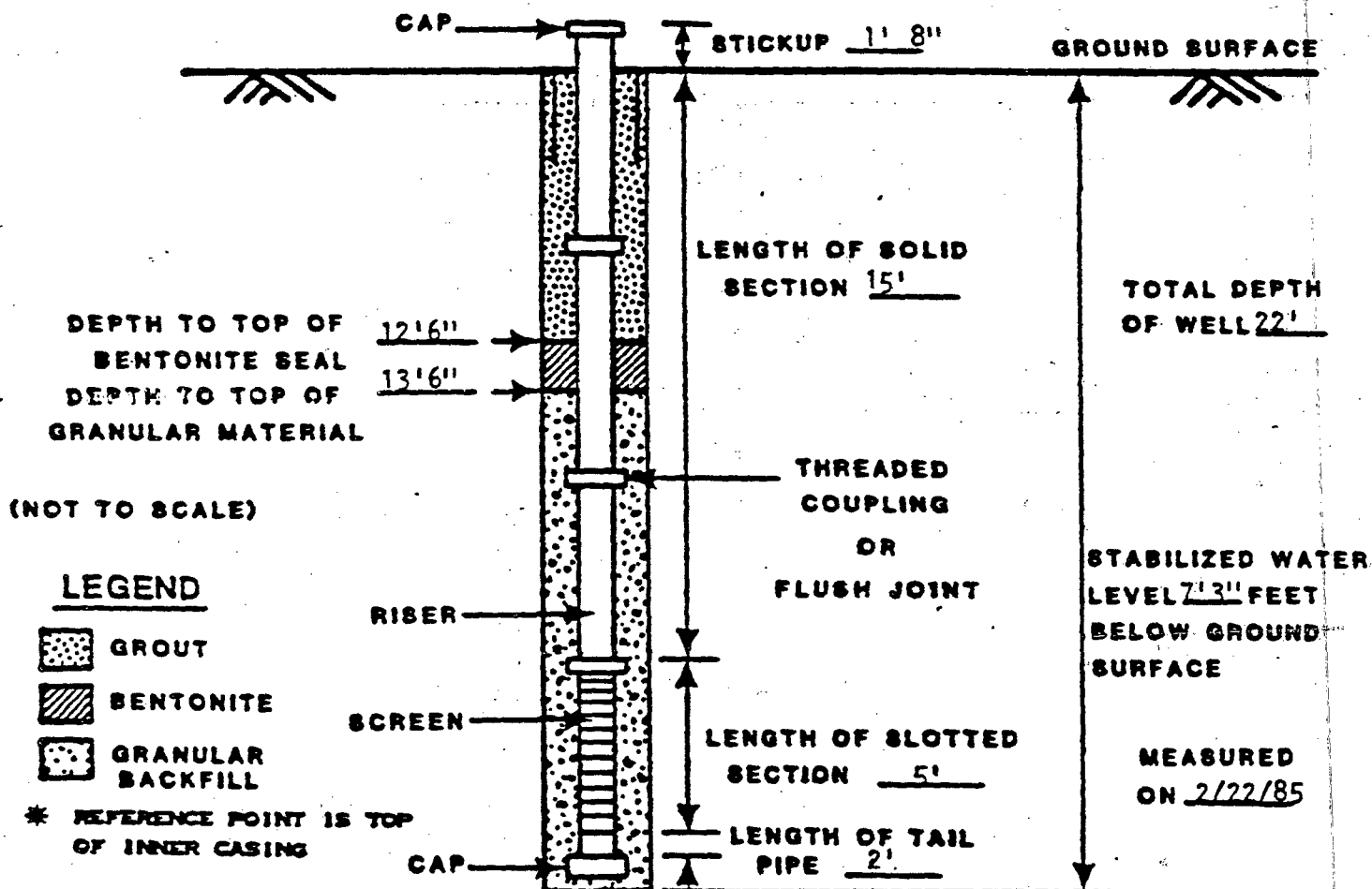


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HOUSTON TEXAS

TYPE II PIEZOMETER INSTALLATION RECORD

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER P-10 INSTALLATION DATE 2/20/85
LOCATION G+ 36.5, 20+ 53.0
GROUND SURFACE ELEVATION 31.17 REFERENCE POINT ELEVATION 32.84
GRANULAR BACKFILL MATERIAL Clemtex #2 SLOT SIZE Hand Slotted
SCREEN MATERIAL Schedule 80 PVC SCREEN DIAMETER 1"
RISER MATERIAL Schedule 80 PVC RISER DIAMETER 1"
DRILLING TECHNIQUE Hollow stem auger DRILLING CONTRACTOR LETCO
BOREHOLE DIAMETER 7 7/8" LAW ENGINEERING E. A. Solek
LOCK BRAND _____ FIELD REPRESENTATIVE _____
KEY CODE/COMBINATION _____ SIZE/MODEL _____

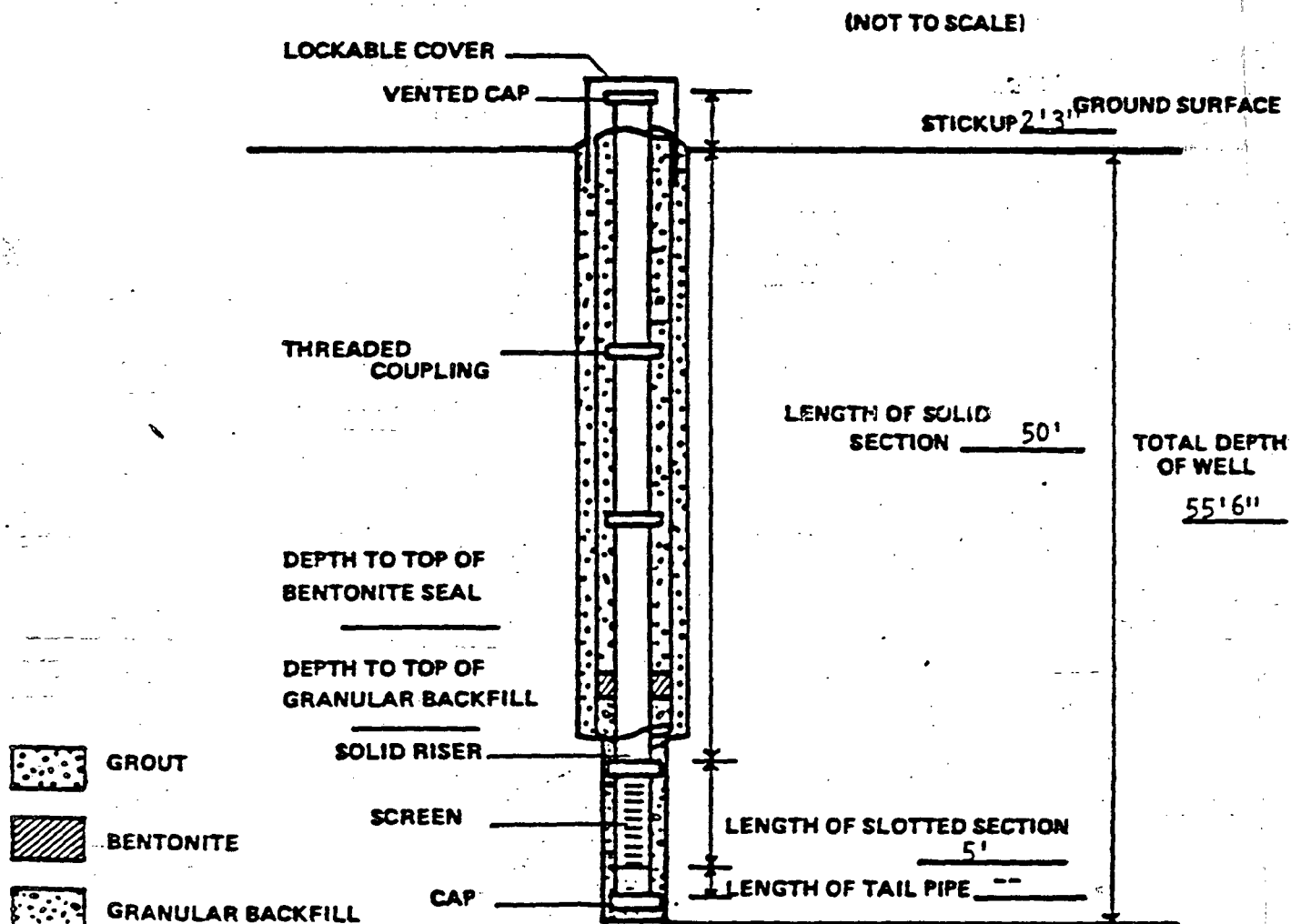
REFERENCE POINT *



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HOUSTON TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

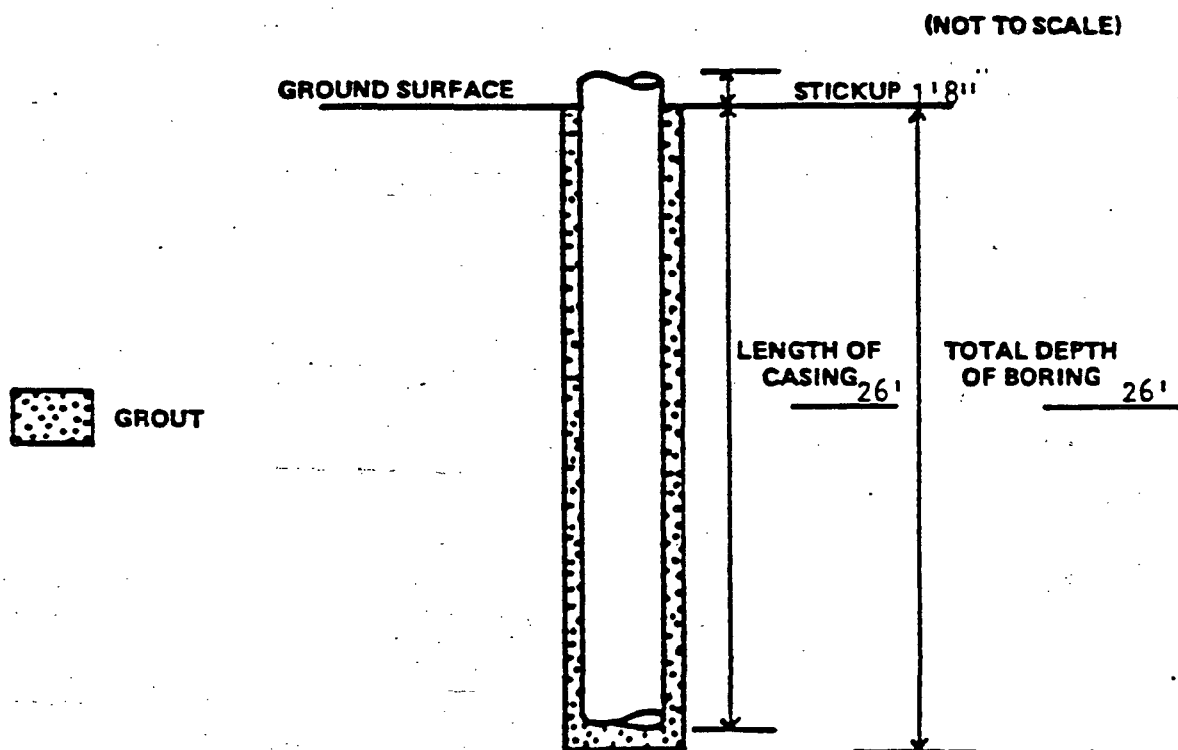
JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER E0-4 INSTALLATION DATE 2/22/85
LOCATION G + 7.40, 24 + 70.0
GROUND SURFACE ELEVATION 34.39 REFERENCE POINT ELEVATION 35.89
GRANULAR BACKFILL Clemtex #2 SLOT SIZE 0.010"
SCREEN MATERIAL Schedule 40 PVC SCREEN DIAMETER 3"
RISER MATERIAL Schedule 40 PVC RISER DIAMETER 3"
BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. F. A. Solek
DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCO
LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
STABILIZED WATER LEVEL _____ FEET BELOW GROUND SURFACE, MEASURED ON _____



LAW ENGINEERING TESTING
COMPANY
HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part A

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER E0-4 INSTALLATION DATE 2/19/85
 LOCATION G + 7.40, 24 + 70.0
 GROUND SURFACE ELEVATION 34.39
 CASING MATERIAL Schedule 40 PVC CASING DIAMETER 6"
 BOREHOLE DIAMETER 7 7/8"
 DRILLING TECHNIQUE Hollow Stem Auger
 DRILLING CONTRACTOR LETCO
 LAW ENGINEERING FIELD REPRESENTATIVE S. J. Lauritsen



LAW ENGINEERING TESTING
 COMPANY
 HOUSTON, TEXAS

LAR ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

REPORT DATE: 05/20/85

ATTENTION: JAMES A CAMP

MUS CLIENT NO: 282501

MUS SAMPLE NO: 25041129

VENDOR NO: 01921401

WORK ORDER NO: 55680

DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: ED-4

04/23

TEST	DETERMINATION	RESULTS	UNITS
K290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliforms - MF	0	col/100ml
MO30	Arsenic (As)	< 0.01	mg/l
MO40	Barium (Ba)	1.2	mg/l
MO90	Cadmium (Cd)	< 0.005	mg/l
MI40	Chromium (Cr)	< 0.03	mg/l
K200	Lead (Pb)	< 0.05	mg/l
K250	Mercury (Hg)	< 0.0002	mg/l
K290	Selenium (Se)	< 0.01	mg/l
M300	Silver (Ag)	< 0.02	mg/l
OH10	2,4-D	< 100	ug/l
OH15	2,4,5 TP(Silvex)	< 10	ug/l
OP51	Lindane	< 4	ug/l
OP52	Endrin	< 0.2	ug/l
OP53	Methoxychlor	< 100	ug/l
OP54	Toxaphene	< 5	ug/l
W300	Fluoride, Soluble (F)	0.6	mg/l
W390	Nitrate (N)	< 0.1	mg/l
W300	RCRA GROUNDWATER - QUALITY		
K190	Iron, Total (Fe)	0.07	mg/l
K240	Manganese (Mn)	< 0.02	mg/l
K310	Sodium (Na)	760	mg/l
W130	Chloride (Cl)	2000	mg/l
W500	Phenolics	0.8	mg/l
W730	Sulfate, Turbidimetric (SO4)	47	mg/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	27	mg/l
W315	Halogens, Total Organic (TOX)	230	ug/l
W490	pH	11.5	
W700	Specific Conductance @ 25C	24,000	umhos/cm

REMARKS:

Reviewed and Approved by: DM

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536
ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

MUS CLIENT NO: 282501
MUS SAMPLE NO: 25041130
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: AE-2

04/23

TEST	DETERMINATION	RESULTS	UNITS
M290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliforms - MF	500,000	col/100ml
M030	Arsenic (As)	< 0.01	ug/l
M040	Barium (Ba)	0.9	ug/l
M090	Cadmium (Cd)	< 0.005	ug/l
M140	Chromium (Cr)	< 0.03	ug/l
M200	Lead (Pb)	< 0.05	ug/l
M250	Mercury (Hg)	< 0.0002	ug/l
M290	Selenium (Se)	< 0.01	ug/l
M300	Silver (Ag)	< 0.02	ug/l
0410	2,4-D	< 100	ug/l
0415	2,4,5 TP(Silvex)	< 10	ug/l
051	Lindane	< 4	ug/l
052	Endrin	< 0.2	ug/l
053	Methoxychlor	< 100	ug/l
054	Toxaphene	< 5	ug/l
M300	Fluoride, Soluble (F)	1.2	ug/l
M390	Nitrate (N)	< 0.1	ug/l
M300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	0.88	ug/l
M240	Manganese (Mn)	0.32	ug/l
M310	Sodium (Na)	370	ug/l
M130	Chloride (Cl)	900	ug/l
M500	Phenolics	0.13	ug/l
M730	Sulfate, Turbidimetric (SO4)	43	ug/l
M310	RCRA GROUNDWATER-CONTAMINATION		
M100	Carbon, Total Organic (TOC)	10	ug/l
M315	Halogens, Total Organic (TOX)	92	ug/l
M490	pH	7.4	
M700	Specific Conductance @ 25C	19,000	umhos/cm

REMARKS:

Reviewed and Approved by: DH

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501

NUS SAMPLE NO: 25041131

VENDOR NO: 01921401

WORK ORDER NO: 55680

DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-1

04/23

TEST	DETERMINATION	RESULTS	UNITS
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	0	col/100ml
MO30	Arsenic (As)	0.09	ug/l
MO40	Barium (Ba)	7.0	ug/l
MO90	Cadmium (Cd)	< 0.005	ug/l
MI40	Chromium (Cr)	< 0.03	ug/l
M200	Lead (Pb)	< 0.05	ug/l
M250	Mercury (Hg)	< 0.0002	ug/l
M290	Selenium (Se)	< 0.01	ug/l
M300	Silver (Ag)	< 0.02	ug/l
OH10	2,4-D	< 100	ug/l
OH15	2,4,5 TP(Silvex)	< 10	ug/l
OP51	Lindane	< 4	ug/l
OP52	Endrin	< 0.2	ug/l
OP53	Methoxychlor	< 100	ug/l
OP54	Toxaphene	< 5	ug/l
W300	Fluoride, Soluble (F)	0.5	ug/l
W390	Nitrate (N)	0.4	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	0.02	ug/l
M240	Manganese (Mn)	0.68	ug/l
M310	Sodium (Na)	5500	ug/l
W130	Chloride (Cl)	12,000	ug/l
W500	Phenolics	25	ug/l
W730	Sulfate, Turbidimetric (SO4)	< 2	ug/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	260	ug/l
W315	Halogens, Total Organic (TOX)	910	ug/l
W490	pH	6.0	
W700	Specific Conductance @ 25C	40,000	umhos/cm

COMMENTS:

Reviewed and Approved by: DM

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501

NUS SAMPLE NO: 25041132

VENDOR NO: 01921401

WORK ORDER NO: 55680

DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: ED-2

04/23

TEST	DETERMINATION	RESULTS	UNITS
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	THTC	col/100ml
M030	Arsenic (As)	(0.01	mg/l
M040	Barium (Ba)	10	mg/l
M090	Cadmium (Cd)	(0.005	mg/l
M140	Chromium (Cr)	(0.03	mg/l
M200	Lead (Pb)	(0.05	mg/l
M250	Mercury (Hg)	0.0011	mg/l
M290	Selenium (Se)	(0.01	mg/l
M300	Silver (Ag)	(0.02	mg/l
OH10	2,4-D	(100	ug/l
OH15	2,4,5 TP(Silvex)	(10	ug/l
DP51	Lindane	(4	ug/l
DP52	Endrin	(0.2	ug/l
DP53	Methoxychlor	(100	ug/l
DP54	Toxaphene	(5	ug/l
W300	Fluoride, Soluble (F)	0.8	mg/l
W390	Nitrate (N)	0.4	mg/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	53	mg/l
M240	Manganese (Mn)	7.3	mg/l
M310	Sodium (Na)	7300	mg/l
W130	Chloride (Cl)	23,000	mg/l
W500	Phenolics	19	mg/l
W730	Sulfate, Turbidimetric (SO4)	(2	mg/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	300	mg/l
W315	Halogens, Total Organic (TOX)	830	ug/l
W490	pH	6.2	
W700	Specific Conductance @ 25C	69,000	umhos/cm

REMARKS: THTC=Too numerous to count.

Reviewed and Approved by: DH

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536
ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
0110	VOLATILES-PP IN WATER		
DV01	Acrolein	< 10,000	ug/l
DV02	Acrylonitrile	< 10,000	ug/l
DV03	Benzene	< 1000	ug/l
DV05	Bromoform	< 1000	ug/l
DV06	Carbon tetrachloride	< 1000	ug/l
DV07	Chlorobenzene	< 1000	ug/l
DV08	Dibromochloroethane	< 1000	ug/l
DV09	Chloroethane	< 1000	ug/l
DV10	2-Chloroethylvinyl ether	< 1000	ug/l
DV11	Chloroform	< 1000	ug/l
DV12	Bromodichloroethane	< 1000	ug/l
DV13	trans-1,3-Dichloropropene ²	< 1000	ug/l
DV14	1,1-Dichloroethane	< 1000	ug/l
DV15	1,2-Dichloroethane	< 1000	ug/l
DV16	1,1-Dichloroethane	< 1000	ug/l
DV17	1,2-Dichloropropane	< 1000	ug/l
DV18	cis-1,3-Dichloropropene ²	< 1000	ug/l
DV19	Ethylbenzene	< 1000	ug/l
DV20	Methyl bromide	< 1000	ug/l
DV21	Methyl chloride	< 1000	ug/l
DV22	Methylene chloride	< 1000	ug/l
DV23	1,1,2,2-Tetrachloroethane	< 1000	ug/l
DV24	Tetrachloroethene	< 1000	ug/l
DV25	Toluene	< 1000	ug/l
DV26	trans-1,2-Dichloroethene	< 1000	ug/l
DV27	1,1,1-Trichloroethane	< 1000	ug/l
DV28	1,1,2-Trichloroethane	< 1000	ug/l
DV29	Trichloroethene	< 1000	ug/l
DV31	Vinyl chloride	< 1000	ug/l
0120	ACID EXTRACTABLES		
0A01	2-Chlorophenol	< 500	ug/l

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 53680
DATE RECEIVED: 04/24/85

ATTENTION: JAMES A CAMP

SAMPLE IDENTIFICATION: ED-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
DA02	2,4-Dichlorophenol	(500	ug/l
DA03	2,4-Dimethylphenol	(500	ug/l
DA04	2-Methyl-4,6-dinitrophenol	(1000	ug/l
DA05	2,4-Dinitrophenol	(2500	ug/l
DA06	2-Nitrophenol	(1000	ug/l
DA07	4-Nitrophenol	(2500	ug/l
DA08	4-Chloro-3-methylphenol	(500	ug/l
DA09	Pentachlorophenol	(500	ug/l
DA10	Phenol	7700	ug/l
DA11	2,4,6-Trichlorophenol	(500	ug/l
DE30	Acid Extraction-Water		
0130	BASE NEUTRAL EXTRACTABLES		
DB01	Acenaphthene	(500	ug/l
DB02	Acenaphthylene	(500	ug/l
DB03	Anthracene	(500	ug/l
DB04	Benzo(a)anthracene	(2000	ug/l
DB05	Benzo(a)pyrene	(500	ug/l
DB06	Benzo(b)fluoranthene	(1000	ug/l
DB07	Benzo(g,h,i)perylene	(1000	ug/l
DB08	Benzo(k)fluoranthene	(1000	ug/l
DB09	Bis(2-chloroethoxy)methane	(500	ug/l
DB10	Bis(2-chloroethyl)ether	(500	ug/l
DB11	Bis(2-chloroisopropyl)ether	(500	ug/l
DB12	Bis(2-ethylhexyl)phthalate	(500	ug/l
DB13	4-Bromophenyl phenyl ether	(500	ug/l
DB14	Benzyl butyl phthalate	(500	ug/l
DB15	2-Chloronaphthalene	(500	ug/l
DB16	4-Chlorophenyl phenyl ether	(500	ug/l
DB17	Chrysene	(500	ug/l
DB18	Dibenzo(a,h)anthracene	(1000	ug/l
DB19	1,2-Dichlorobenzene	(500	ug/l

LAE ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536
ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: ED-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
0821	1,3-Dichlorobenzene	(500	ug/l
0822	1,4-Dichlorobenzene	(500	ug/l
0823	3,3'-Dichlorobenzidine	(1000	ug/l
0824	Diethyl phthalate	(500	ug/l
0825	Dimethyl phthalate	(500	ug/l
0826	Di-n-butyl phthalate	(500	ug/l
0827	2,4-Dinitrotoluene	(1000	ug/l
0828	2,6-Dinitrotoluene	(1000	ug/l
0829	Di-n-octyl phthalate	(500	ug/l
0830	1,2-Diphenylhydrazine(Azobz)	(500	ug/l
0831	Fluoranthene	(500	ug/l
0832	Fluorene	(500	ug/l
0833	Hexachlorobenzene	(500	ug/l
0834	Hexachlorobutadiene	(500	ug/l
0835	Hexachloro-cyclopentadiene	(500	ug/l
0836	Hexachloroethane	(500	ug/l
0837	Indeno(1,2,3-cd)pyrene	(1000	ug/l
0838	Isophorone	(500	ug/l
0839	Naphthalene	(500	ug/l
0840	Nitrobenzene	(500	ug/l
0841	N-Nitrosodimethylamine	(500	ug/l
0842	N-Nitrosodi-n-propylamine	(500	ug/l
0843	N-Nitrosodiphenylamine	(500	ug/l
0844	Phenanthrene	(500	ug/l
0845	Pyrene	(500	ug/l
0846	1,2,4-Trichlorobenzene	(500	ug/l
0825	Base Neutral Extraction-Water		
0049	GC/MS Base Neut. Lib. Search		
0050	GC/MS Acid Lib. Search		
0F30	GC/MS Volatile Lib. Search		
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	0	col/100ml



Laboratory Services Division
900 Gemini Avenue
Houston, TX 77058

REMIT TO:
900 Gemini Avenue
Houston, TX 77058

713-488-1810

LAE ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536

REPORT DATE: 05/20/85

MUS CLIENT NO: 282501
MUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

ATTENTION: JAMES A CAMP

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
M030	Arsenic (As)	(0.01	ug/l
M040	Barium (Ba)	8.0	ug/l
M090	Cadmium (Cd)	(0.005	ug/l
M140	Chromium (Cr)	0.04	ug/l
M200	Lead (Pb)	(0.05	ug/l
M250	Mercury (Hg)	(0.0002	ug/l
M290	Selenium (Se)	(0.01	ug/l
M300	Silver (Ag)	(0.02	ug/l
OH10	2,4-D	(100	ug/l
OH15	2,4,5 TP(Silvex)	(10	ug/l
OP51	Lindane	(4	ug/l
OP52	Endrin	(0.2	ug/l
OP53	Methoxychlor	(100	ug/l
OP54	Toxaphene	(5	ug/l
W300	Fluoride, Soluble (F)	0.6	ug/l
W390	Nitrate (N)	0.5	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	91	ug/l
M240	Manganese (Mn)	10	ug/l
M310	Sodium (Na)	8700	ug/l
W130	Chloride (Cl)	14,000	ug/l
W500	Phenolics	14	ug/l
W730	Sulfate, Turbidimetric (SO4)	4	ug/l
W311	RCRA UPGRADIENT CONTAMINATION		
W101	Carbon, Total Organic(TOC)1	250	ug/l
W102	Carbon, Total Organic(TOC)2	240	ug/l
W103	Carbon, Total Organic(TOC)3	250	ug/l
W104	Carbon, Total Organic(TOC)4	250	ug/l
W316	Halogens, Total Organic (TOX)1	790	ug/l
W317	Halogens, Total Organic (TOX)2	820	ug/l
W318	Halogens, Total Organic (TOX)3	960	ug/l
W319	Halogens, Total Organic (TOX)4	950	ug/l

LAB ANALYSIS REPORT

CLIENT NAME: LIBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

ATTENTION: JAMES A CAMP

MIS CLIENT NO: 282501

MIS SAMPLE NO: 25041133

VENDOR NO: 01921401

WORK ORDER NO: 55680

DATE RECEIVED: 04/24/85

REPORT DATE: 05/20/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
W491	pH - 1	6.1	
W492	pH - 2	6.1	
W493	pH - 3	6.1	
W494	pH - 4	6.1	
W701	Specific Conductance @ 25C - 1	40,000	umhos/cm
W702	Specific Conductance @ 25C - 2	40,000	umhos/cm
W703	Specific Conductance @ 25C - 3	40,000	umhos/cm
W704	Specific Conductance @ 25C - 4	40,000	umhos/cm

REMARKS:

TABLE 2
RESULTS OF WATER QUALITY TESTING

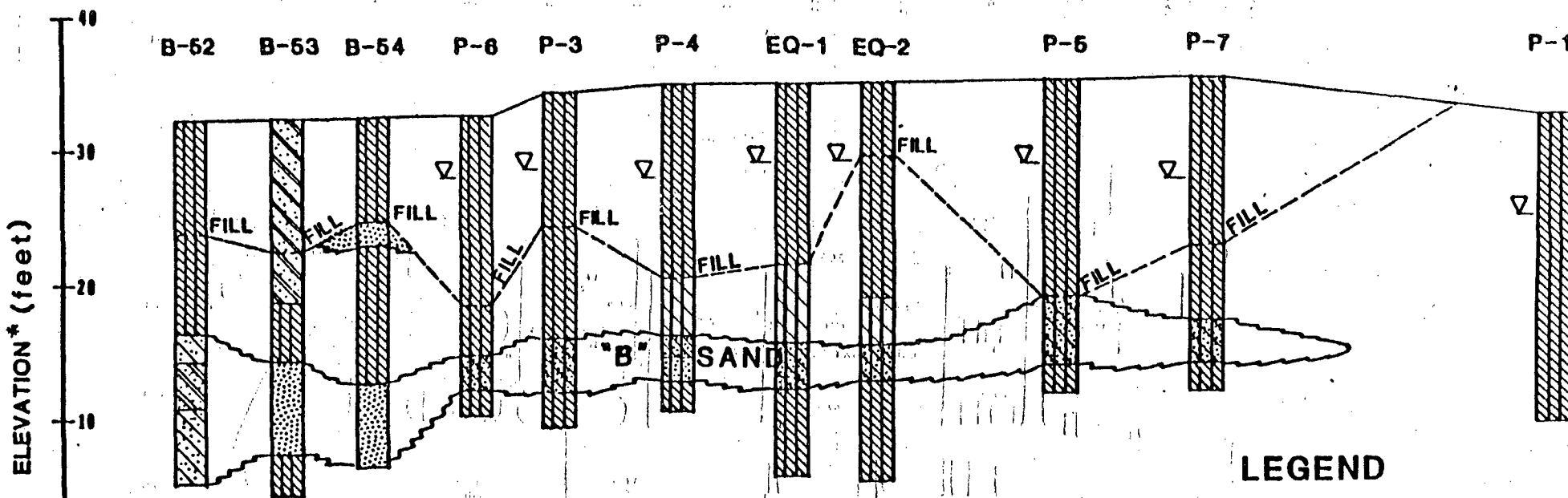
Well or Piezometer No.	PH*	Conductivity* (uMHOS/cm)	Iron (mg/l)	Total Organic Carbon
P - 1	6.5	5,500	6.9	35
P - 2	6.6	12,500	18.0	281
P - 3	6.6	18,000	2.8	85
P - 4	6.4	25,000	30.0	166
P - 5	6.3	12,000	34.0	74
P - 6	6.5	12,000	26.0	117
P - 7	6.4	5,000	28.0	94
P - 8	6.4	5,500	13.5	85
P - 9	6.4	3,200	1.6	24
P - 10	6.6	5,500	1.6	179
EQ - 4	8.8	1,900	--	--

* Results of field tests

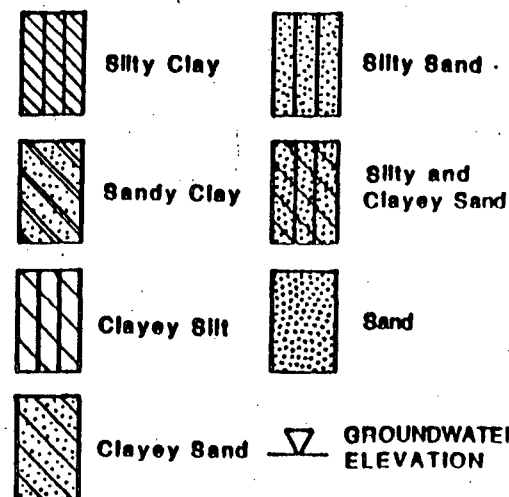
SOUTH
X

NORTH
X'

B-52 B-53 B-54 P-6 P-3 P-4 EQ-1 EQ-2 P-6 P-7 P-10



LEGEND



* DATUM: LUBRIZOL PLANT BENCHMARK

0 100 200
scale feet

FIGURE 3

CROSS SECTION X-X'
LETCo JOB NO. HT-1288-84W



LAW ENGINEERING TESTING COMPANY
HOUSTON, TEXAS
THE LUBRIZOL CORPORATION
DEER PARK, TEXAS

PROJECT

GROUNDWATER ASSESSMENT OF
VICINITY OF EQUALIZATION BASIN

☒ NEW ☒ UPDATE

RECEIVED
FEB 17 84
ENFORCEMENT AND
FIELD OPERATIONS

THE LUBRIZOL CORPORATION - DEER PARK MANUFACTURING FACILITY

GROUNDWATER ASSESSMENT PLAN FOR THE EQUALIZATION BASIN

The Lubrizol Corporation is presently conducting a hydrogeologic field investigation to determine the rate and extent of migration of any contaminant constituents from the equalization basin. The investigation developed by Law Engineering Testing Company, utilizes hollow stem auger borings to track the extent of any contamination. The location of the borings are shown in the attached figure.

After drilling the borings into the shallow sands, groundwater samples were collected. Field measurements of the specific conductance and pH of the groundwater were made. Additional groundwater samples were taken and tested for total organic carbon (TOC) and iron. These parameters were used because analyses could be performed quickly on-site by Lubrizol Quality Assurance personnel. Furthermore, the parameters appear to be indicative of the presence and relative level of any contamination. Results from the initial borings were used to choose the location of subsequent borings.

Upon completion of each boring, one-inch diameter piezometers constructed of slotted PVC pipe were installed. The piezometers will be used to measure water levels which will be interpreted to characterize the groundwater gradient and direction of flow.

Analytical results obtained from the groundwater quality testing will be used to define the extent and direction of any contaminant plume. A monitor well was installed in the area where contaminant concentrations appear to be greatest based on results from water quality analysis of the piezometer borings. The well location is shown in the attached figure. This well was screened at a depth of 55 feet and is intended to evaluate the possible downward migration of any contaminants.

Additional field work will consist of field permeability tests (slug tests) in two of the previously installed monitor wells. This would provide information concerning the permeability of the shallow sands.

In addition to the work performed by Law Engineering, Lubrizol will sample the five monitor wells to define any contaminants in the groundwater. Sampling and analysis will be performed according to the attached sampling and analysis plan. The samples will be analyzed for groundwater quality parameters, EPA interim primary drinking water parameters, and indicators of groundwater contamination. Also, the sample from monitor well EQ-3 will be analyzed for priority pollutants to determine the concentrations of any contaminant constituents.

The Lubrizol Corporation - Deer Park Manufacturing Facility
Groundwater Assessment Plan for the Equalization Basin
Page 2

This well was chosen for sampling because results of previous testing as presented in Lubrizol's letter to TDWR dated December 28, 1984, indicated that contaminant levels found in this well would be representative of any contaminant plume. All analyses will be performed in accordance with EPA standard methods.

The analytical results of the entire investigation along with interpretation, conclusions and possible remedial measures will be forwarded to the Department by April 15, 1985.

FGH:d11
0017f
2/26/85

attachment

Coordinator Initials

FY 1985 HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG

OK 9

EPA ID: 11X121014110161763181

14. Handler Type: 1-1 Major

HANDLER NAME: -----

ADDRESS: -----

3298

1X1 Non-Major

DATE OF INITIAL EVALUATION WHICH IS
THE BASIS FOR THIS REPORT: 8/10/85

So. AGENCY RESPONSIBLE FOR

E = EPA

O = Other

EVALUATION:

S = State

B = Contractor/State

Put code in box 1-3

J = Joint

X = Oversight

Choose one

C = Contractor/EPA

TYPE OF EVALUATION COVERED

1-1

BY THIS REPORT:

Put code in box

Choose one

1 = Evaluation Inspection

2 = Sampling Inspection

3 = Record Review

4 = Ground Water Monitoring Evaluation

5 = Follow Up

6 = Other - Citizen Complaint

7 = Other - Part 9 Call-In

8 = Other - Withdrawal Candidate

9 = Other - Closed Facility

0 = Other - General

DATE OF EVALUATION COVERED BY

THIS REPORT (enter only if different from 5): 8/22/85

AREA AND CLASS OF VIOLATION

(enter 'X' in appropriate box
if violations found. Enter'0' if no violations found in
Area violated.)

Class of

Violation

GWM

CL/PC

Area of Violation

Fin. Res.

Pt. B

Cenl. Sch.

Manifest

Other

FF1

FF2

FF3

S

03

SM

S

03

SM

ENFORCEMENT ACTIONS:

Area of	Type	Date Action	Compliance Dates	Penalty	Resp. As.
Class Violation	(use code)	Taken	Scheduled	Assessed	Collected
1	GW	84	85-01-25		5

03 SM

Codes for Types of Enforcement Actions: 03 = Warning Letter

05 = Administrative Order

11 = Filed Civil Action

12 = Filed Criminal Action

(See instruction for additional codes) 10 = Informal

13 = EPA letter to States

Codes for Responsible Agency: E = EPA

S = State

X = EPA oversight

Comments: GW ANALYSIS RESULTS INDICATE CONTAMINATION

(Limit each comment to 80 characters. Up to 99 comments are possible.)

	Initials	Date
Reviewed HWDMS, agrees with inspection information	_____	_____
Reviewed HWDMS, does not agree with inspection information	_____	_____
Major/Nonmajor status verified	_____	_____

Routing:

	Name	Initials	Date
1. Enforcement Coordinator	_____	_____	_____
2. Compliance Coordinator	_____	_____	_____
3. (If incorrect, return to originator)	_____	_____	_____
4. J. Hail/ D. French	_____	_____	_____
5. Enforcement Coordinator	_____	_____	_____
6. If incorrect, review and return to J. Hail/D. French	_____	_____	_____
7. M. Burns	_____	_____	_____

Comments:

Facility: Lubrizol Corp.

EPA ID:

TXD041067638

(see Reg 430324) 1

WELL SYSTEM	1. Are wells in place? If not, why not?	Yes Recently installed to meet closure requirements.
	2. Are the wells adequate? If not, why not?	YES
	3. Anticipated dates of new well construction.	schedule is being submitted.
	4. Date of directives to company to modify existing (265) system (including inadequate waiver directives)	12/14/84 letter
	5. Dates of directives to company to modify 264 system.	N/A
	6. Is there a plan in house which needs to be reviewed (265, 264)? Date granted, if applicable.	Partial Closure Plan under review
COMPLIANCE	7. Groundwater compliance actions taken to date (e.g., Notice of Violation, 3048 order, 3013 order, referral to Department of Justice or Attorney General (if state). Indicate the date of any such action.	Pending as a result of closure plan submitted and there is recent discovery that 2 facilities needed ground water monitoring. RF
	8. Has facility ever taken waste from Superfund site? If so, when?	No
	9. What actions are planned during the remainder of Fiscal year 1985?	RF since well analyses indicates contamination is present.
INSPECTION	10. Date of anticipated or actual Part B receipt (indicate date first received and date completed)	5/84
	11. Date of last EPA inspection	NONE
	12. Date of last state inspection	10/16/84
	13. Approximate date of scheduled EPA inspection	NONE
CLOSURE	14. Date company plans to close	5/85
	15. Date hazardous waste ceased to be accepted	N/A
	16. Date of approval of closure plan	
	17. Date of Certification of Closure	
ADDITIONAL ITEMS	18. Has the facility filed a notice of significant increase in contamination parameters? If so, when?	No
	19. Is this facility in assessment? If so, has report been filed? If so, when?	No
	20. Is there any indication that any regulated unit released or discharged HW constituents into the GW? If so: Has any corr. action been initiated? If so, when?	YES. No

Dick Whittington

B. J. [Signature]

Director, Environmental Office

2 page
Attachment.

NOV 29 1984

Mr. G. C. McDonald
Regulatory Affairs Manager
Magna Corporation
P. O. Box 33387
Houston, Texas 77033

Dear Mr. McDonald:

Re: Solid Waste Registration No. 30594
Closure of Class I Hazardous Waste Surface Impoundment

We have concluded review of the closure plan pertaining to the hazardous waste surface impoundment at Magna's Holmes Road facility. The closure plan includes submittals by Magna dated November 22, 1983; June 27, 1984; August 10, 1984; and August 22, 1984.

The closure plan, as modified below, is approved pursuant to the requirements of 31 Texas Administrative Code (TAC) Sections 335.211 through 335.216 and Section 335.286.

1. All material removed from the surface impoundments (i.e., contaminated soil and liner material) shall be tested to determine its waste class and shall be disposed of at a facility authorized to receive such waste.
2. Magna Corporation shall provide TDWR District 7 with notification ten days prior to each ground-water sampling event.
3. Magna Corporation shall submit quarterly ground-water monitoring results to TDWR Austin and District 7 Offices within 60 days of each sampling event.
4. The detection limit for mercury during analyses of ground-water samples shall be one one-thousandth of one milligram per liter (.001 mg/l).
5. Ground-water levels in monitoring wells shall be determined during each sampling event. These levels shall be recorded and reported with bimonthly sampling results.
6. The subject surface impoundment shall be capped slightly above-grade with a minimum of 2 feet⁷ of clay having a compacted permeability of not greater than 1×10^{-7} cm/sec.

When certification of closure is submitted, your Notice of Registration will be updated as appropriate. If you have any questions regarding the modifications to the closure plan, please telephone Allen L. Messenger at AC512/475-2041.

Sincerely,

Charles E. Nemir
Executive Director

ALM:bb

cc: Bill Brown - E&FO Div.
Russ Kimble - E&FO Div.
Bill Chadick - REI - Houston
Jeff Civins, Vincent & Elkins - Austin
TDWR District 7 Office - Deer Park

NEW ☒ UPDATE ☐
ENFORCEMENT AND FIELD OPERATIONS

HAZARDOUS WASTE COMPLIANCE MONITORING AND ENFORCEMENT LOG



RECEIVED

4851

TDWR ID: 30324
2. INDUSTRY NAME: Lubrizol Deer Park Plant
3. SITE ADDRESS: Tidal Road, Deer Park ZIP: 77536 COUNTY: Harris
PHONE: 713 479 2851

NOV 19 '84
ENFORCEMENT AND FIELD OPERATIONS

7. DATE SUB: 02-15-85 FACILITY: GF
(CENTRAL OFFICE USE ONLY) (G,F,T, 1,2,3)
5. DATE OF INITIAL EVALUATION: 07-25-84 RESPONSIBLE AGENCY: S
4. MAJOR/NONMAJOR: N 6. TYPE OF EVALUATION: EV
(CEI-EV, EC; CME-GW; OTHER-CL, SW; SAMPLE-SA; FOLLOW UP-FO; RECORD REVIEW-RC, RF; FOR HIGH PRIORITY PLACE H IN 1ST BLOCK)

E v a l		D e g		Date Notice of Violation	Date Conference	AREA AND CLASS OF VIOLATION (INCLUDES DISTRICT LEVEL ENFORCEMENT ACTIONS)		Date High Prior. Determination	Date of Estim. Compliance	Date Response is Due for Nov.	Date of Actual Compliance	Resol/Unres
GW	<input checked="" type="checkbox"/>	1				01-25-85						U
CL	<input checked="" type="checkbox"/>	2		11-12-84						12-18-84	12-15-84	R
PT	<input type="checkbox"/>											
MA	<input checked="" type="checkbox"/>											
FI	<input checked="" type="checkbox"/>	2		11-12-84		01-25-85			04-31-85	12-18-84		U
SC	<input type="checkbox"/>											
OT	<input checked="" type="checkbox"/>	2		11-12-84						12-18-84		R

COMMENTS: (COUNTY)
001 101 006 0 R 069 2 R 262 2 R 114b 2 C 116d 2 C 117d
2 0

#02
Resolved, facility had different name. Letters attached

WORK NO: 9091 NO. OF SAMPLES: SUBMITTED BY: Stennie Meadows
Inspection findings indicated the facility has received waste water from offsite; more information requested in NOV. Also, Louisiana transporter Frenchy's is transporting hazardous and non-hazardous Class I from Texas to La. without a T.D.W.R. on EPA

THE LUBRIZOL CORPORATION

DEER PARK PLANT

HAZARDOUS WASTE PERMIT APPLICATION ADDENDUM

FOR TEXAS AIR CONTROL BOARD

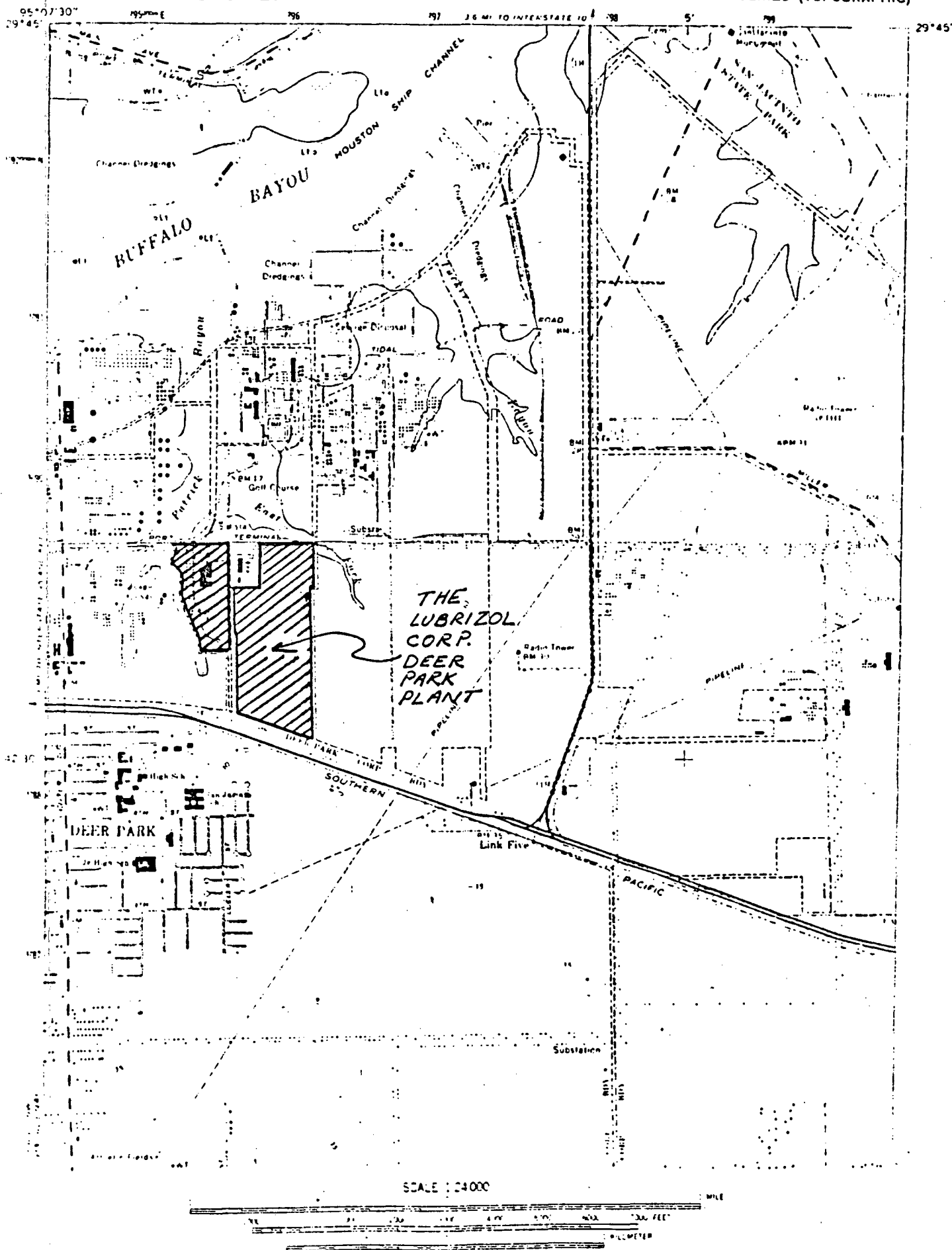
The attached information applies to tanks B-32 and WO-6. No information is included for tanks J-42 and CA-1 because these tanks contain aqueous salt solutions which produce no air contaminants other than water vapor. The contents of these tanks are considered hazardous because of pH.

The following information is included for B-32 and WO-6:

1. Area map showing the plant location in relation to surrounding buildings, schools, residences, etc.
2. Plot plan showing plant layout, including B-32 and WO-6 locations.
3. Description of air contaminants, emission rates, and supporting calculations.
4. Flow charts and description of B-32 and WO-6 function.
5. Composition of waste and amounts handled.
6. Emission point parameters.
7. Documentation of compliance with Federal New Source Performance Standard and Federal National Emission Standard for Hazardous Air Pollutants.
8. Atmospheric dispersion modeling results.
9. Storage tank data.

NOTE: Some information requested for TACB review does not apply to this application because neither of the tanks is a new, modified, or major source. Also, neither vessel is equipped with an emission control device.

AAL:ms
0739C



B-32 29°43'9.3"
95°06'56.9"

WO-6 29°43'10.6"
95°06'56.7"

B-32

WO-6

SHELL CHEMICAL CO

LAGOON

POLY UNIT

SHIP'G WHSE

WHSE

WHSE

UNION CARBIDE

Benchmark
29°43'14"N
95°06'46"W

PETENTION POND

N+00
1+00
2+00
3+00
4+00
5+00
6+00
7+00
8+00
9+00
10+00
11+00
12+00
13+00
14+00
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16+00
17+00
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98+00
99+00
100+00

B-32 Emissions

Source Emissions: 56.6 Lb/Year MEK and Toluene
(73% MEK, 27% Toluene)

Fugitive Emissions 3,979 Lb/Year VOC including
442 Lb/Year MEK and
442 Lb/Year Toluene

Total Emissions: 483 Lb/Year MEK
457 Lb/Year Toluene
3,095 Lb/Year other VOC

Maximum Emission Rate: 0.043 Lb/Min. MEK
0.016 Lb/Min. Toluene

WO-6 Emissions

Source Emissions: 96.9 Lb/Year MEK and Toluene
(73% MEK, 27% Toluene)

Fugitive Emissions 845 Lb/Year VOC including
94 Lb/Year MEK and
94 Lb/Year Toluene

Total Emissions: 165 Lb/Year MEK
120 Lb/Year Toluene
657 Lb/Year other VOC

Maximum Emission Rate: 0.043 Lb/Min. MEK
0.016 Lb/Min. Toluene

Emissions Calculations

Worst case contents for either B-32 or WO-6

	<u>Total</u>	<u>Less Sand & Silt</u>	<u>M.W.</u>	<u>Moles</u>	<u>Mole Fract.</u>	<u>Vapor Press.</u>
MEK	10%	10.5%	72	0.146	0.194	0.14 psia @80°F.
Toluene	10%	10.5%	92	0.114	0.151	0.04
Sand & Silt	5%	--	--	--	--	--
Diluent Oil	30%	31.5%	~ 260	0.121	0.161	Negligible
Alk. Succinamide	20%	21.0%	~ 520	0.040	0.053	"
Ca. Sulfonate	20%	21.0%	~ 800	0.026	0.035	"
Water	5%	5.5%	18	0.306	0.406	0.50
	100%	100.0%		0.753	1.000	

Mol. Wt. of organic vapor = $(0.146 \times 72 + .114 \times 92)/(0.146 + 0.114) = 80.8$

Organic chemical vapor pressure = $(0.194 \times 0.14) + (0.151 \times 0.04) = 0.033$ psia

B-32 losses based on AP-42 fixed roof working and breathing loss calculations.

$L_W = 2.40 \times 10^{-2} \times 80.8 \times 0.033 \times 1 \times 1 = 0.065$ Lb/1000 gallons or 2.6 Lb/Year

$L_B = 2.21 \times 10^{-4} \times 80.8 \left[\frac{0.033}{14.7-0.033} \right]^{0.68} \times 10^{1.73} \times 12.5^{0.51} \times 21^{0.50} \times 1.15 \times 0.51 \times 1.0$
 $= 0.148$ Lb/Day or 54.0 Lb/Year MEK & Toluene
 (73% MEK, 27% Toluene)

B-32 Fugitive losses based on U.S. EPA 450/3-82-010

Pump Seals (Light Liquid)	0.0494	Kg/Hr x 1 =	0.0494
Valves (Light Liquid)	0.0071	Kg/Hr x 16 =	0.1136
Flanges	0.00083	Kg/Hr x 42 =	0.0349
Open Ended Valves	0.0017	Kg/Hr x 3 =	0.0051
Sampling Connections	0.0150	Kg/Hr x 1 =	<u>0.0150</u>

0.2180 Kg/Hr

0.2180 Kg/Hr = 4,211 Lb/Year

Total VOC = 94.5% 4,211 x 0.945 = 3,979 Lb VOC/Year

MEK = 10.5% 4,211 x 0.105 = 442 Lb MEK/Year

Toluene = 10.5% 4,211 x 0.105 = 442 Lb Toluene/Year

Emissions Calculations - Continued...

WO-6 Losses based on AP-42 fixed roof working and breathing loss calculations

$$L_W = 2.40 \times 10^{-2} \times 80.8 \times 0.033 \times 1 \times 1 = 0.065 \text{ Lb/1000 gallons or } 2.6 \text{ Lb/Year}$$

$$L_B = 2.21 \times 10^{-4} \times 80.8 \left[\frac{0.033}{14.7 - 0.033} \right]^{0.68} \times 14.92^{1.73} \times 9.6^{0.51} \times 21^{0.50} \times 1.15 \times 0.51 \times 1.0$$

= 0.258 Lb/Day or 94.3 Lb/Year MEK & Toluene
(73% MEK, 27% Toluene)

WO-6 Fugitive losses based on U.S. EPA 450/3-82-010

Valves (Light Liquid)	0.0071 Kg/Hr x 5	= 0.0355
Flanges	0.00083 Kg/Hr x 11	= 0.0091
Open Ended Valves	0.0017 Kg/Hr x 1	= <u>0.0017</u>

0.0463 Kg/Hr

$$0.0463 \text{ Kg/Hr} = 894 \text{ Lb/Year}$$

Total VOC	= 94.5%	894 x 0.945 = 845 Lb VOC/Year
MEK	= 10.5%	894 x 0.105 = 94 Lb MEK/Year
Toluene	= 10.5%	894 x 0.105 = 94 Lb Toluene/Year

Maximum one time emission assuming 5,000 gallons transferred to B-32 or WO-6 at 200 gallons/minute. This is equal to displacement of 670 cubic feet of saturated air in 25 minutes (or 26.8 cubic feet per minute).

$$\begin{aligned} Y_{MEK} &= 0.14/14.7 = 0.010 \\ Y_{TOL} &= 0.04/14.7 = 0.003 \\ Y_{H_2O} &= 0.50/14.7 = 0.034 \\ Y_{AIR} &= 1 - Y_{MEK} - Y_{TOL} - Y_{H_2O} = 0.953 \end{aligned}$$

$$\text{Total Moles} = 670 \text{ ft}^3 / 459 \text{ ft}^3/\text{Lb Mol} = 1.5 \text{ Lb Mol}$$

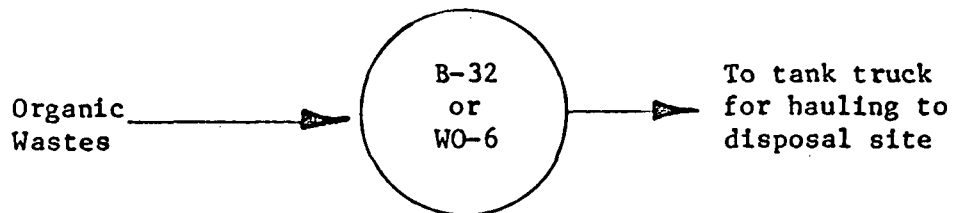
$$\begin{aligned} \text{MEK} &= 1.5 \text{ Lb Mol} \times 0.010 \text{ Mol MEK/Lb Mol} \times 72 \text{ Lb MEK/Mol MEK} = 1.08 \text{ Lb} \\ \text{Toluene} &= 1.5 \text{ Lb Mol} \times 0.0003 \text{ Mol Tol/Lb Mol} \times 92 \text{ Lb Tol/Mol Tol} = 0.41 \text{ Lb} \end{aligned}$$

Max. rate of emission over 25 minute period:

$$\begin{aligned} 1.08 \text{ Lb MEK/25 minutes} &= 0.043 \text{ Lb/Min MEK} \\ 0.41 \text{ Lb Tol/25 minutes} &= 0.016 \text{ Lb/Min Toluene} \end{aligned}$$

PROCESS DESCRIPTION & FLOW CHART

Both B-32 and WO-6 are holding tanks for miscellaneous organic waste. Organic wastes are collected in the two tanks until the volume is sufficient for trucking for disposal.



COMPOSITION OF WASTE B-32 & WO-6

Organic

Diluent Oil (Paraffinic & Naphthenic)	30-40% weight
Alkylated Succinamide	10-20%
Methyl Ethyl Ketone	5-10%
Toluene	5-10%
Calcium Sulfonate	10-20%

Inorganic

Water	5-15%
Sand & Silt	0- 5%

Throughput of waste; 40,000 gallons/year.

Either B-32 or WO-6 may handle up to 100% of his waste with the other tank handling the balance.

EMISSION POINT PARAMETERS

B-32

Emission point is a 2" diameter goosenecked pipe vent to the atmosphere. The opening of the vent is approximately two feet above the tank top and is about 27 feet above grade.

The vent temperature will match the tank's 80°F average annual temperature. The maximum temperature will be approximately 100°F.

Average vent velocity based on working and breathing losses of 56.6 pounds per year is 2.1 feet per minute.

Maximum vent velocity based on 200 gallons per minute pumping rate into the tank is 1,148 ft/minute. The emission rate corresponding to 200 gallons per minute pumping is 0.059 pounds per minute MEK and toluene.

WG-6

Emission point is a 2" diameter vertical pipe vent to the atmosphere. The opening of the vent is approximately one foot above the tank top, and is about 20 feet above grade.

The vent temperature will match the tank's 80°F average annual temperature. The maximum temperature will be approximately 100°F.

Average vent velocity based on working and breathing losses of 96.9 pounds per year is 3.6 feet per minute.

Maximum vent velocity based on 200 gallons per minute pumping rate into the tank is 1,148 ft/minute. The emission rate corresponding to this 200 gallon per minute is 0.059 pounds per minute.

DOCUMENTATION OF COMPLIANCE NSPS, NESHAPS

NSPS

Neither tank is covered by NSPS because each was in service before the standard become effective. B-32 was placed in service during 1958. WO-6 was placed in service during 1965.

NESHAPS

The waste held in the two tanks contains none of the regulated substances listed in 50 Fed. Reg. 46290, November 7, 1985.

Attachment I

RCRA Regulated Units	Status	
1 Tank WO-1	Active	→ ADDITIONAL INFO REQUIRED
2 ✓ Tank WO-6	Active	
3 Tank CA-1	Active	→ NO ANALYTICAL
4 Tank J-42	Active	→ NO ANALYTICAL
5 Tank T-23X	Active	→ 10/7/85 INSPE. SECONDARY CONTAINMENT ALSO ADEQUATE
6 ✓ Tank Car Shell	Inactive	
7 ✓ Tank B-32	Active	
8 ✓ Drum Storage Area less 90 days	Active	
9 ✓ Lift Station No. 1	Inactive	
10 ✓ Equalization Lagoon	Inactive	
11 Tank J-52	Active	} NO DESIGN DATA AVAILABLE (WITH NOT IF RCRA REGULATED)
12 Tank C-5	Active	
13 Tank C-6	Active	
14 Tank C-22	Active	
15 Tank C-26	Active	
16 Tank M-26	Active	
17 Tank M-28	Active	
18 Tank M-29	Active	
19 Tank M-31	Active	
20 Tank L-6	Active	
21 Tank K-1	Active	
22 ✓ Below-grade Storage Tank (steel)	Inactive	OK

Attachment II

<u>SWMU</u>	<u>Status</u>	<u>SWMU</u>	<u>Status</u>
23 Below-grade Storage Tank (concrete box)	Inactive	50 Wastewater Aeration Lagoon	Active
24 Bulk Storage Area	Active	51 Below-grade Tank T-7A	Active
25 Tank 4849	Active	52 Below-grade Tank T-7B	Active
26 Tank WO-3	Active	53 Tank E-1	Active
27 Tank WO-5	Active	54 Tank E-2	Active
28 Tank T-19P	Active	55 Tank E-4	Active
29 Tank T-19W	Active	56 Surface Impoundment	Inactive
30 Tank T-19X	Active	57 Waste Pile	Inactive
31 Tank T-19X	Active		
32 Tank T-20X	Active		
33 Tank H-6	Active		
34 Bulk Storage Area	Active		
35 Container Storage	Active		
36 Bulk Storage Area	Active		
37 Bulk Storage Area	Active		
38 Bulk Storage Area	Active		
39 Tank RA-3	Active		
40 Tank WO-4	Active		
41 (New) Lift Station No. 1	Active		
42 WATER STORAGE NO. 2	Active		
43 Tank T-1A	Active		
44 Tank T-1B	Active		
45 Below-grade Tank T-3X	Active		
46 Below-grade Tank T-4X	Active		
47 Below-grade Tank T-22X	Active		
48 Below-grade Tank T-5A	Active		
49 Below-grade Tank T-5B	Active		

Attachment III

III. Pollutant Dispersal Pathways: (ground water, surface water, air)

Ground Water: The uppermost, usable aquifer in the site area is the Upper Chicot Aquifer located at a depth of approximately 400 feet. Discontinuous sand pockets or "lenses" are present in the uppermost strata at depths of 15 to 30 feet. These sands are typically sandy silts or very fine silty sands. Shallow ground water flow is generally north and west towards Patrick Bayou.

Surface Water: Into Patrick Bayou, thence into the Houston Ship Channel.

Air: The prevailing wind direction is from the southeast.

V. Target Populations of Concern: (human, environment)

Located within one mile of the plant are industrial, commercial, residential, and undeveloped areas. Land adjacent to plant boundaries is industrial. The nearest residential areas are approximately one-half mile from the plant. See land use map, Attachment IIIA.

VI. Documents Reviewed:

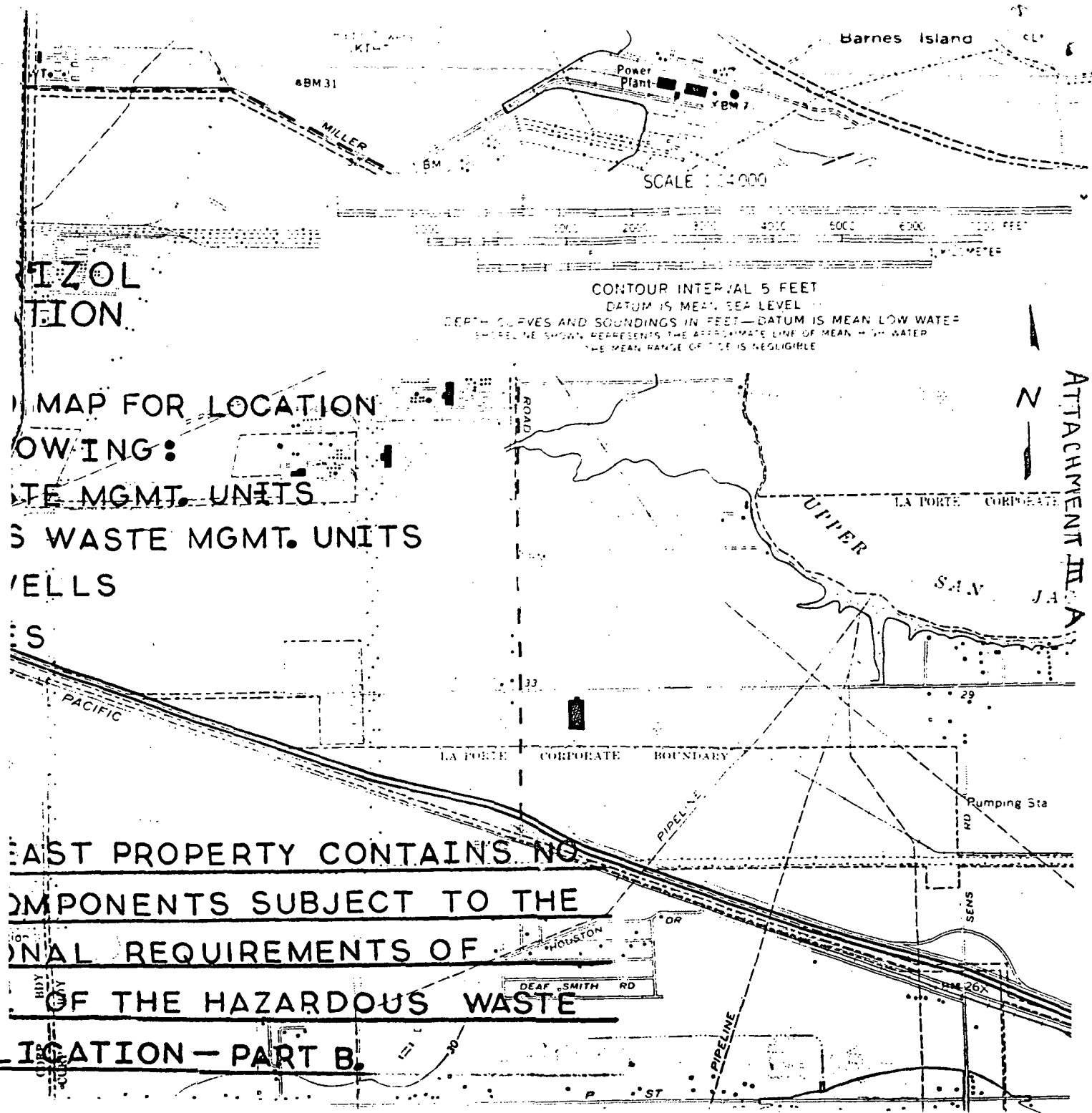
Notice of Registration (12/19/85), TWC Inspection (9/20/85), Permit Application Parts A & B, Part B Permit Application, Section VIII Addition (9/17/85), Part A revisions (7/3/85).

IZOL
TION

MAP FOR LOCATION
OWING:
TE MGMT. UNITS
S WASTE MGMT. UNITS
WELLS

EAST PROPERTY CONTAINS NO
OMPONENTS SUBJECT TO THE
ONAL REQUIREMENTS OF
OF THE HAZARDOUS WASTE

ICATION - PART B.



Attachment IV

FATE AND TOXICITY DATA

Appendix VIII Constituent Fate and Toxicity data follows as referenced:

<u>Constituent</u>	<u>Ref (1)</u>	<u>Ref (2)</u>
Barium & Compounds	72	
Butyl Alcohols	109	
Carbon Disulfide	134	I.13.46-1
Chromium & Compounds	176	I.4.6-1
Maleic Anhydride	415	
Methyl Alcohol (Methanol)	434	
Methyl Ethyl Ketone (M.E.K.)	451	
Phenol	531	I.8.1-1
Sodium Aluminate	41	
Sulfuric Acid	619	
Toluene	659	I.9.10-1
Xylenes	714	I.9.18-1

Ref. (1) - Handbook of Toxic and Hazardous Chemicals, Marshall Sittig, 1981.

Ref. (2) - EPA Treatability Manual, Vol. 1. USEPA-600/2-82-001a.

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

AAL-601-86

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158

January 13, 1986

CERTIFIED MAIL
RETURN RECEIPT REQUESTED

Texas Water Commission
P. O. Box 13087, Capitol Station
Austin, TX 78711

Attention: Mr. Wayne Harry
Hazardous & Solid Waste Permits Section


Reference: The Lubrizol Corporation
Hazardous Waste Permit Application No. 10576
Proposed Permit No. HW-5007

Dear Mr. Harry

The attached Hazardous Waste Permit Application Addendum is for Texas Air Control Board review. Please note that information is submitted for only two of the four tanks being permitted, B-32 and WO-6. Information for the other two tanks, J-42 and CA-1 is not included because these tanks produce no air contaminants other than water vapor. Questions concerning this Addendum should be directed to Andrew Lundgren, Environmental Engineer, 713/479-2851, extension 542.

Yours truly,

THE LUBRIZOL CORPORATION


K. H. Hopping
General Manager/Houston Plants

AAL:ms
0739C

Attachments

TEXAS DEPARTMENT OF WATER RESOURCES
Industrial Solid Waste Compliance Monitoring Inspection Report

INSPECTION COVER SHEET

Major ☒

TDWR Registration No. 30324

C.O. Use Only:

Nonmajor ☐

EPA ID No. TXD041067638

10/86
Data Entry Date

REC
Reviewer

NAME OF COMPANY Lubrizol Corp

ADDRESS P.O. Box 158 Deer Park, Texas

PHONE (713) 479-2851

SITE ADDRESS Tidal Road Deer Park, Texas

PHONE _____

COUNTY Harris

TYPE OF INDUSTRY Manufacturer of lub oil additives

Part A Application submitted to the State ? Yes ☒ No ☐ To EPA ? Yes ☐ No ☐

Affidavit of Exclusion submitted to the State ? Yes ☐ No ☐ To EPA ? Yes ☐ No ☐

Will this facility require a permit ? Yes ☒ No ☐

Current Waste Management Activity (Indicate IH, INH, II, III or check as appropriate) :

Generator IH, INH Treatment IH Storage IH, II Disposal _____ Transporter _____
II

HW Exemptions: Sm. Quan. Gen. _____ 90-Day Storage _____ Other _____

HW Facilities (circle the appropriate facility codes): C ☒ ☒ ☒ WP LT LF I TT TR O
→ under litigation - enforcement

NH Facilities (circle the appropriate facility codes): ☒ ☒ ☒ WP LT LF I TT TR O

Anomalies in the above information will be addressed by : (a) Enforcement in progress ☒

(b) Central Office _____, (c) District Office ☒, (d) Owner/Operator ☒.

Inspection Information :

Type of Evaluation or Inspection (circle one) ☒ GW SA FO OT CL SW

Inspector's Name and Title Mac Vilas - Field Representative

Inspection Participants Bob Copes, Rose Ann Simpson, Frank Hejzmanek

Inspection Date(s) September 10, 1985

Approved :

Don Kerner
District Supervisor

Signed :

Mac Vilas
Inspector

Date : September 20, 1985

TEXAS DEPARTMENT OF WATER RESOURCES
Industrial Solid Waste Compliance Monitoring Inspection Report

CONTENTS

FACILITY NAME Lubrizol Corp REGISTRATION NO. 30324

OCT 11 1985

- ☒ 1. Code Sheet (0814)
- ☒ 2. Contents Sheet
- ☒ 3. Generator/Facility Checklist (includes Coversheet)
- 3 4. Component Facility Checklists*
 - 1 A. Containers (C) - See Section F of Generators Checklist
 - 1 B. Tanks (T)
 - 1 C. Surface Impoundments (SI)
 - _____ D. Waste Piles (WP)
 - _____ E. Land Treatment (LT)
 - _____ F. Landfills (LF)
 - _____ G. Incinerators (I)
 - _____ H. Thermal Treatment (TT)
 - _____ I. Chemical, Physical, or Biological Treatment (TR)
 - _____ J. Other (O) _____
- ☒ 5. (a) Closure and Post Closure Checklist, _____ (b) Closure Supplement
- ☒ 6. (a) Facility Status Sheet(s), _____ (b) Ground Water Monitoring Page
- ☒ 7. Ground Water Monitoring Program Checklist
- ☒ 8. Letter of Violation Notification
- _____ 9. Interoffice Memorandum
- _____ 10. Registration
- ☒ 11. Maps, Plans, Sketches
- _____ 12. Other (describe) _____

* If a required Checklist is omitted, explain: _____

GENERATORS CHECKLIST

Reg. No. 30324

Section A - Notification and Waste Determination (335.6, .62, .63)

1. The owner/operator has made a determination that all solid wastes generated are either hazardous or non-hazardous. N/A YES ☒ NO
2. If the determination is non-hazardous or has not been made by owner/operator, can a hazardous waste determination be made from observations or tests completed during this inspection? If so, explain in comments. Include documentation. N/A ☒ YES NO
3. For hazardous wastes identified, check the method(s) used for determination:
 - a. Listed as a hazardous waste in 40 CFR Part 261, Subpart D. ☒
 - b. Process or materials knowledge.
 - c. Tested for characteristics as identified in 40 CFR Part 261, Subpart C (If equivalent test method is used, attach a copy). ☒
4. Notification of waste streams generated is current. (Comments) N/A YES NO ☒
5. Do all waste management (T/S/D) methods in use agree with registration? (Comments) N/A YES NO ☒
6. Has facility received an EPA ID number? N/A YES ☒ NO
7. Does this facility generate, store, treat or dispose of PCB wastes? (some past generation with capacitor replacement) N/A YES ☒ NO
8. Does this facility generate waste oils? N/A YES ☒ NO
If yes, describe storage and disposition.
(Waste no.'s 11, 19 and 20). Stored in various above ground tanks and collected by HESC. Maintenance (motor) oils generated are not on the NOR.
9. Does this facility generate spent solvents? N/A YES ☒ NO
If yes, describe storage and disposition.
(Waste no. 10). Stored in an above ground tank (B-32) and is collected by HESC. (Frenchy's)
10. Does this facility utilize sumps in the management of hazardous wastes? N/A YES NO ☒
If yes, describe use.

*** An entry in this column indicates corrective action or response is needed

Section B - Special Conditions (335.75)

1. If generator has received from or transported to a foreign source any hazardous waste, the appropriate notice has been filed with the Regional Administrator (EPA).
2. Waste was manifested and signed by the foreign consignee.
3. Confirmation of waste transport out of the country has been received by the generator.

N/A ☒ YES ☐ NO ☐

N/A ☒ YES ☐ NO ☐

N/A ☒ YES ☐ NO ☐

Section C - Recordkeeping and Reporting (335.9, .10, .13, .70 - .72)

1. Generator maintains the required records and reports for the necessary three years.
- a. Shipping tickets ☒ b. Monthly summaries ☒
c. Tests and analyses ☒ d. Annual reports ☒ e. Exception reports ☒
2. Have any spills, unauthorized discharges or threats of such discharges occurred?

N/A ☐ YES ☒ NO ☐

YES ☐ NO ☒

If yes, have they been reported (335.4, .453)?

N/A ☒ YES ☐ NO ☐

Have they been remedied (335.453)? Explain in comments.

N/A ☒ YES ☐ NO ☐

*** DO NOT COMPLETE SECTION D IF GENERATOR DISPOSES OF HAZARDOUS AND/OR NONHAZARDOUS WASTES ONSITE ONLY ***

Section D - Pretransport and Manifest Requirements (335.61 - .69)

1. Identify primary off-site disposal facilities using comments sheet or copy of registration.
- a. Off-site disposal facilities are either currently permitted or operating under interim status standards.
2. TDWR manifest/shipping ticket is properly completed.
3. Generator has submitted exception reports for any return (white) copies of shipping tickets not received.

N/A ☐ YES ☒ NO ☐

N/A ☐ YES ☒ NO ☐

N/A ☒ YES ☐ NO ☐

*** STOP HERE IF FACILITY QUALIFIES AS A SMALL QUANTITY GENERATOR
PROCEED TO FACILITIES CHECKLIST IF APPLICABLE (H OR NH TSD FACILITY) ***

4. Containers used to hold waste(s) meet the DOT packaging requirements of 49 CFR Parts 173, 178, and 179 before being offered for transport (if circumstances observed). N/A ☒ YES ☐ NO ☐
5. Generator labels and marks each package in accordance with 49 CFR Part 172 (if circumstances observed). N/A ☒ YES ☐ NO ☐
6. Each container of 110 gallons or less is marked with the required hazardous waste warning label. N/A ☒ YES ☐ NO ☐
7. Generator placards off-site waste shipments in accordance with DOT regulations under 49 CFR Part 172, Subpart F. N/A ☒ YES ☐ NO ☐

Section E - Accumulation Time (335.69)

Note: A facility may accumulate and store hazardous wastes for up to 90 days without a permit.

1. Each container used to temporarily store waste before transport is clearly dated. (Comments) N/A ☐ YES ☐ NO ☒
2. Containers and/or tanks are labeled as "Hazardous Waste" while accumulating on site. N/A ☐ YES ☒ NO ☐

Section F - Container Management (335.241 - .247)

1. Wastes are being stored in containers of good condition and of the appropriate type. N/A ☐ YES ☒ NO ☐
2. Generator inspects containers for leakage or corrosion at least weekly. N/A ☒ YES ☐ NO ☐
3. Generator locates containers holding ignitable or reactive waste at least 15 meters (50 feet) from the facility's property line. N/A ☒ YES ☐ NO ☐
4. Containers holding incompatible wastes are separated by a physical barrier or sufficient distance. N/A ☒ YES ☐ NO ☐
5. Storage area has containment protection as described in 40 CFR Part 264 (this will be a future permit requirement). N/A ☒ YES ☐ NO ☐
6. Describe drum or container storage area using comments sheet and/or photos.

Note: If tanks are used at the facility, complete the Tanks Checklist.

Note: If this is a T/S/D Facility (Hazardous or Non-hazardous), proceed to Facilities Checklist.

COMMENTS SHEET

Section A / Paragraph 4 : Maintenance (motor) oils generated are not listed on the Notice of Registration.

Section A / Paragraph 5 : Waste no.'s 001, 002 and 006 are no longer collected in the sub-surface tank (facility no. 01). These wastes are currently collected in roll off bins. Waste no. 008 is listed as OFF-SITE under disposition. It is stored in tanks J-42 and CA-1. Some of this waste is

Section _____ / Paragraph _____ : reused for effluent treatment.

Section D / Paragraph 1 :

Waste number 001 - Sprint

Waste number 002 - Sprint

Waste number 003 - Sprint

Waste number 004 - No longer generated

Waste number 005 - Secondary use

Checklist Generators

Date Sept. 10, 1985

Reg./Permit No. 30324

COMMENTS SHEET

Section D / Paragraph 1 :

Waste number 006 - Sold to Stauffer

Waste number 007 - No longer generated

Waste number 008 - DST

Waste number 009 - Sprint

Waste number 010 - HESC (Frenchy's) Hansbrough

Section _____ / Paragraph _____ : Energy Systems Co.

Waste number 011 - HESC

Waste numbers 012, 013, 014, 015, 016, 017, 018 - none ^{mv} generated yet

Waste number - 019 - HESC

Waste number 020 - HESC

Section E / Paragraph 1 : The tanks themselves

are not dated but the date of the last load
taken from ^{mv} each tank is noted on the inspection logs.

Section F / Paragraph 6 : ^{mv} Roll off bins are used

to collect wastes nos. 001 and 002.

FACILITIES CHECKLIST

Reg. No. 30324

Site Information for Hazardous and Non-hazardous T/S/D Facilities :

Are any solid waste facilities located within the 100-year floodplain ? no

Describe land use within one mile primarily industrial

Are there any closed or abandoned facilities? N/A YES NO ☒
If yes, describe in comments. [planned closure of sub-surface tank facility no. 01]

Section A - General Facility Standards

- ***
1. Proof of deed recordation of on-site disposal facilities has been provided to the agency. (Comments) N/A ☒ YES NO
 2. Are all non-hazardous waste facilities compliant with the general prohibition contained in TAC 335.4? N/A YES ☒ NO
If no, explain in comments.
 3. A sketch of facilities, general site orientation showing landfills, surface impoundments, injection wells, drainage routes, water bodies and courses and other pertinent features (separate sketch or diagram of landfills, etc.) should be attached to this and other facility checklists.

Note: For all nonhazardous, noncommercial facilities, do not complete the remainder of this Facilities Checklist. Proceed to the specific component facility checklist(s) and complete one for each waste management facility (one checklist can cover multiple facilities of one type if comments address individual violations).

Section B - Personnel Training (335.117)

1. Owner/operator maintains proper personnel training records at the facility. N/A YES ☒ NO
2. Personnel training records include:
 - a. Job title and written job description of each position. N/A YES ☒ NO
 - b. Description of type and amount of training. N/A YES ☒ NO
 - c. Records of training given to facility personnel. N/A YES ☒ NO
3. Personnel training records are maintained for the appropriate length of time. N/A YES NO ☒
4. Training program is adequate for response to emergencies. N/A YES ☒ NO

*** An entry in this column indicates corrective action or response needed.

Section C - Preparedness and Prevention (335.131 - 137)

1. Describe any evidence of fire, explosion, or contamination of the environment in the comments sheets.

2. Facility is equipped with:

a. Internal communication or alarm system within easy access.

N/A ☐ YES ☒ NO ☐

b. Telephone or two-way radio to call emergency response personnel.

N/A ☐ YES ☒ NO ☐

c. Portable fire extinguishers, fire control equipment, spill control equipment and decontamination equipment are tested regularly to assure proper operation.

N/A ☐ YES ☒ NO ☐

d. Available water supply volume and pressure are adequate for hoses, sprinklers or water spray system.

N/A ☐ YES ☒ NO ☐

3. Aisle space is sufficient to allow unobstructed movement of personnel and equipment.

N/A ☐ YES ☒ NO ☐

4. Owner/operator has attempted to make arrangements with the local response authorities to familiarize them with the layout of the facility, properties of hazardous wastes handled and associated hazards, work locations of facility personnel, entrances to facility roads and possible evacuation routes.

N/A ☐ YES ☒ NO ☐

5. In the event that more than one law enforcement or fire department might respond, a primary authority has been designated.

N/A ☐ YES ☒ NO ☐

6. Owner/operator has attempted to reach agreements with State emergency response teams, emergency response contractors and equipment suppliers.

N/A ☐ YES ☒ NO ☐

7. Owner/operator has attempted to make arrangements with local hospitals to familiarize them with the properties of the hazardous wastes handled and the types of injuries that could result from fires, explosions or releases from the facility.

N/A ☐ YES ☒ NO ☐

8. State or local authorities have entered into the necessary arrangements.

N/A ☐ YES ☒ NO ☐

Section D - Contingency Plan and Emergency Procedures (335.151 - .157)

1. A contingency plan adequate to meet emergency procedures requirements is maintained at the facility.

N/A ☐ YES ☒ NO ☐

2. The contingency plan is: a. revised SPCC plan ☐ b. separate document ☒

3. Emergency coordinator is on site or on call at all times.

N/A ☐ YES ☒ NO ☐

*** STOP HERE IF FACILITY ACCUMULATES WASTE ON SITE FOR LESS THAN 90 DAYS ***

Section E - Waste Analysis (335.114)

1. Facility has a waste analysis plan. N/A ☐ YES ☒ NO ☐
2. Waste analysis plan is maintained at the facility. N/A ☐ YES ☒ NO ☐
3. Waste analysis plan includes the following:
- a. Parameters for which each waste will be analyzed. N/A ☐ YES ☒ NO ☐
- b. Test methods used to test for these parameters. N/A ☐ YES ☒ NO ☐
- c. Sampling method used to obtain sample. N/A ☐ YES ☒ NO ☐
- d. Frequency with which the initial analysis will be reviewed or repeated. N/A ☐ YES ☒ NO ☐
- Note:** Frequency includes the requirement to repeat analysis whenever waste stream or process is changed.
- e. Waste analyses that generators have agreed to provide. N/A ☐ YES ☒ NO ☐
- f. For off-site disposal facilities, the procedures which are used to inspect and analyze each movement of hazardous waste, including:
- 1) Procedures to be used to determine the identity of each movement of waste. N/A ☒ YES ☐ NO ☐
- 2) Sampling method to be used to obtain a representative sample of the waste to be identified. N/A ☒ YES ☐ NO ☐

Section F - Security (335.115)

1. The facility provides adequate security. N/A ☐ YES ☒ NO ☐
- a. ☐ 24-hour surveillance system, OR
- b. ☒ Artificial and/or natural barrier around facility, AND
Describe: Fenced completely except for area
adjoining Patrick Bayou
- c. ☒ Means to control access through entrances.
Describe: Guard at entrance
2. Facility has a sign with the legend "Danger - Unauthorized Personnel Keep Out". N/A ☐ YES ☒ NO ☐

Section G - General Inspection Requirements (335.116)

1. Facility has a written inspection plan and schedule. N/A ☐ YES ☒ NO ☐
2. Inspection plan is maintained at the facility. N/A ☐ YES ☒ NO ☐
3. Plan and schedule provide for the inspection of the following:
 - a. Monitoring equipment N/A ☐ YES ☒ NO ☐
 - b. Safety and emergency equipment N/A ☐ YES ☒ NO ☐
 - c. Security devices N/A ☐ YES ☒ NO ☐
 - d. Operating and structural equipment. N/A ☐ YES ☒ NO ☐
4. Schedule or plan identifies the types of problems to be looked for during the inspection.
 - a. Malfunction and deterioration N/A ☐ YES ☒ NO ☐
 - b. Operator error N/A ☐ YES ☒ NO ☐
 - c. Discharge or threat of discharge N/A ☐ YES ☒ NO ☐
5. The owner/operator maintains an inspection log which includes:
 - a. Date and time of inspection N/A ☐ YES ☐ NO ☒
 - b. Name of inspector N/A ☐ YES ☒ NO ☐
 - c. Notation of observations N/A ☐ YES ☒ NO ☐
 - d. Date and nature of repairs and remedial action. N/A ☐ YES ☒ NO ☐
6. Malfunctions or other deficiencies noted in the inspection log have been rectified. N/A ☐ YES ☒ NO ☐
7. Inspection log records are maintained for three years. N/A ☐ YES ☒ NO ☐

Section H - Requirements for Ignitable, Reactive or Incompatible Wastes (335.118)

1. Owner/operator is familiar with the proper separation and safeguards needed to prevent ignition or reaction of wastes. N/A ☐ YES ☒ NO ☐
 - a. Use comments sheet to describe separation and confinement procedures.
 - b. Use comments sheet to describe any potential sources of ignition or reaction.
2. Smoking and open flame are confined to specifically designated smoking areas. N/A ☐ YES ☒ NO ☐
3. "No Smoking" signs are posted in hazardous areas. N/A ☒ YES ☐ NO ☐
[They have designated no smoking areas]

Section I - Manifest System, Recordkeeping and Reporting (335.171 - .177)

1. Owner/operator complies with the manifest requirements. N/A ☐ YES ☒ NO ☐
Note: If #1 is not applicable (N/A), go to #6.
2. Waste received from a rail or water (bulk shipment) transporter are accompanied by a properly executed shipping paper. N/A ☒ YES ☐ NO ☐
3. All shipments of wastes received have been consistent with the manifests. N/A ☐ YES ☒ NO ☐
4. Unmanifested wastes are reported to the Executive Director. N/A ☒ YES ☐ NO ☐
5. Discrepancies have been reconciled with the generator and transporter. N/A ☒ YES ☐ NO ☐
6. Owner/operator keeps a written operating record at the facility. N/A ☐ YES ☒ NO ☐
7. Operating record reflects the following:
 - a. Description and quantity of each hazardous waste received and methods and date of treatment/storage/disposal at the facility. N/A ☐ YES ☒ NO ☐
 - b. Location and quantity of each hazardous waste within the facility. N/A ☐ YES ☒ NO ☐
 - c. Records and results of waste analyses and trial tests. N/A ☐ YES ☒ NO ☐
 - d. Summary reports of all incidents that require implementation of the emergency contingency plan. N/A ☒ YES ☐ NO ☐
 - e. Closure cost estimates for all facilities. N/A ☐ YES ☒ NO ☐
 - f. Post-closure cost estimates for all disposal facilities. N/A ☒ YES ☐ NO ☐

Section J - Financial Assurance (335.233)

1. Preinspection call to Central Office confirms that facility has submitted current financial assurance documentation.

N/A ☐ YES ☒ NO ☐

2. If yes, indicate the documents submitted and their respective values:

 Sudden Liability - Amount: \$1,000,000 per occurrence, \$2,000,000 annual.

 Non-sudden Liability - Amount: \$3,000,000 per occurrence, \$6,000,000 annual.

 Closure Assurance - Amount: \$ 49,186

 Post Closure Assurance - Amount: \$

3. Financial Assurance Officer reports that documentation is adequate.

N/A ☐ YES ☒ NO ☐

If no, describe deficiencies:

Date September 10, 1985Reg./Permit No. 30324COMMENTS SHEET

Section A / Paragraph 1 : Required ground water monitoring around the surface impoundment is in progress. If groundwater monitoring detects contamination from the impoundment it should be ^{im}mediately recorded. Groundwater contamination is evident from analysis of groundwater monitoring wells.

Section B / Paragraph 3 : There were no personnel training records for the years prior to 1984. (Sign up sheets for training classes etc.)

Section G / Paragraph 5 : The inspection logs did not have the time of the inspection written on it.

Section _____ / Paragraph _____ :

NOTICE OF REGISTRATION
REGISTRATION NUMBER: 24
COMPANY NAME: LUBRIZOL CORP

30324

0W0550

TEXAS DEPARTMENT OF WATER RESOURCES
NOTICE OF REGISTRATION
INDUSTRIAL SOLID WASTE GENERATION/DISPOSAL

01-07-85

THIS IS NOT A PERMIT AND DOES NOT CONSTITUTE AUTHORIZATION OF ANY WASTE MANAGEMENT ACTIVITIES OR FACILITIES LISTED BELOW. REQUIREMENTS FOR SOLID WASTE MANAGEMENT ARE PROVIDED BY TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TEXAS DEPARTMENT OF WATER RESOURCES (TDWR). CHANGES OR ADDITIONS TO WASTE MANAGEMENT METHODS REFERRED TO IN THIS NOTICE REQUIRE WRITTEN NOTIFICATION TO THE TDWR.

DATE OF NOTICE: 12-30-84

REGISTRATION DATE: 07-05-76

REGISTRATION NUMBER: 30324

EPA I.D. NUMBER: TXD041067638

THE REGISTRATION NUMBER PROVIDES ACCESS TO STORED INFORMATION PERTAINING TO YOUR OPERATION. PLEASE REFER TO THAT NUMBER IN ANY CORRESPONDENCE.

COMPANY NAME: LUBRIZOL CORP
MAILING ADDRESS: DEER PARK PLT ATTN F HEJTHANEK
P O BOX 158
DEER PARK, TEXAS 77536

GENERATING SITE LOCATION:

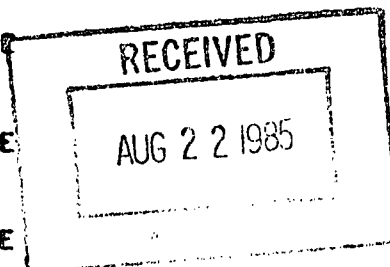
TIDAL ROAD, DEER PARK, TEXAS
CONTACT PERSON: FRANK HEJTHANEK
PHONE: (713) 479-2851
NUMBER OF EMPLOYEES: 500 - 999
TDWR DISTRICT: 07

REGISTRATION STATUS: ACTIVE

HAZARDOUS WASTE STATUS: GENERATOR/TRANSPORTER/TSD FACILITY

I. WASTE GENERATED:

WASTE NUMBER	DESCRIPTION	CLASS	CODE	DISPOSITION
001	DIATOMACEOUS EARTH FILTER MEDIA WITH OIL, PLASTIC, & DIRT	II	270640	OFF-SITE
002	BIOLOGICAL SLUDGE, DOMESTIC (SEWER SLUDGE)	II	249950	OFF-SITE
003	PLANT REFUSE, GENERAL MISC.	II	279760	OFF-SITE
004	ORGANIC CHEMICALS (DRAINAGE, FLUSHINGS, AND WASHINGS), MISC.	IH	910760	NO LONGER GENERATED



EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): 0001, F005, U031, U122, U140, U147,

U154, U188, U239, F003

005 SODIUM ALUMINATE IH 900880 ON-SITE/SECONDARY USE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D002

006 SULFUR WASTE/SCRAP II 270240 SOLD FOR RECOVERY

007 PARAFFIN, CHLORINATED I 111920 NO LONGER GENERATED

008 SCRUBBER WATER IH 908260 OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D002

009 CLARIFIER SLUDGE CONTAINING TR ACE ORGANICS II 248930 OFF-SITE

010 SOLVENTS, NON-HALOGENATED IH 913860 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): F005

011 LABORATORY WASTES, MISC. ORGANIC LIQUID IH 910590 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): F003, U031, U122, U140, U147, U154, U188, U239

012 CARBON DISULFIDE IH 981690 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): P022

013 N-BUTYL ALCOHOL IH 914990 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U031

014 ISOBUTYL ALCOHOL IH 914250 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U140

015 METHANOL IH 911080 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U154

016 PHENOL IH 913640 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS):

NOTICE OF REGISTRATION
REGISTRATION NUMBER: 724
COMPANY NAME: LUBRIZOL CORP

017 XYLENE/XYLOL IH 910030 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): U239

018 SOIL, CONTAMINATED IH 970490 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): P022, U031, U140, U147, U154, U188, U189, U239

019 ORGANIC LIQUID AND WATER IH 915490 ON-SITE/OFF-SITE

EPA HAZARDOUS WASTE NOS. (REFER TO 40 CFR PART 261 FOR DESCRIPTIONS): D001

020 ORGANIC LIQUID AND WATER I 115490 ON-SITE/OFF-SITE

II. SHIPPING/REPORTING: PURSUANT TO TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TOWR PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, ISSUANCE OF MANIFESTS AND MONTHLY REPORTING ARE REQUIRED FOR OFF-SITE STORAGE/PROCESSING/DISPOSAL OF THE FOLLOWING CLASS I WASTES LISTED IN PART I. A SHIPMENT SUMMARY REPORT SHOULD BE SUBMITTED FOR EACH MONTH NOT LATER THAN THE 25TH OF THE FOLLOWING MONTH.

008 908260 SCRUBBER WATER

010 913860 SOLVENTS, NON-HALOGENATED

011 910590 LABORATORY WASTES, MISC. ORGANIC LIQUID

012 981690 CARBON DISULFIDE

013 914990 N-BUTYL ALCOHOL

014 914250 ISOBUTYL ALCOHOL

015 911080 METHANOL

016 913640 PHENOL

017 910030 XYLENE/XYLOL

018 970490 SOIL, CONTAMINATED

019 915490 ORGANIC LIQUID AND WATER

020 115490 ORGANIC LIQUID AND WATER

III. ON-SITE WASTE MANAGEMENT FACILITIES:

FAC NO.	FACILITY	STATUS
01	TANK (SUB-SURFACE) STORAGE OF WASTE NUMBER(S) 001, 002, 006 REINFORCED CONCRETE BOX	ACTIVE
02	BULK STORAGE AREA (ENCLOSED) STORAGE OF WASTE NUMBER(S) 003 3-40 CU YD STEEL BINS	ACTIVE
03	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 009 4849 CARBON STEEL VESSEL	ACTIVE
04	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 019 TANK W0-1 CARBON STEEL	ACTIVE
05	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL VESSEL - W0-3	ACTIVE
06	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL VESSEL - W-05	ACTIVE
07	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL VESSEL W0-6	ACTIVE
08	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL VESSEL T-19P	ACTIVE
09	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 FIBERCAST T19-W	ACTIVE
10	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL T-19X	ACTIVE
11	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 1	ACTIVE

	CARBON STEEL T-19V	
12	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL T-20X	ACTIVE
13	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 005 CARBON STEEL T-23X	ACTIVE
14	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 008 DERAKANE 470 CA-1	ACTIVE
15	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 008 DERAKANE 470 J-42	ACTIVE
16	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 020 CARBON STEEL H-6	ACTIVE
17	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 019 CARBON STEEL EFFLUENT TANK CAR SHELL	ACTIVE
18	TANK (SURFACE) STORAGE OF WASTE NUMBER(S) 010, 011 CARBON STEEL B-32	ACTIVE
19	BULK STORAGE AREA (ENCLOSED) STORAGE OF WASTE NUMBER(S) 002 3-30 CU. YD. STEEL BINS	ACTIVE
20	CONTAINER STORAGE AREA STORAGE OF WASTE NUMBER(S) 012, 013, 014, 015, 016, 017, 018 DRUM STORAGE LESS THAN 90 DAYS	ACTIVE

UNLESS OTHERWISE STATED ABOVE, FACILITIES ARE LOCATED
AT TIDAL ROAD, DEER PARK, TEXAS
COUNTY OF HARRIS

IV. RECORDS.

REGISTRATION NUMBER: 0024
COMPANY NAME: LUBRIZOL CORP

- A. FOR PURPOSES OF FILING ANNUAL REPORTS PURSUANT TO TEXAS ADMINISTRATIVE CODE SECTION 335 OF THE RULES OF THE TOWR PERTAINING TO INDUSTRIAL SOLID WASTE MANAGEMENT, RECORDS SHOULD BE MAINTAINED FOR STORAGE, PROCESSING AND/OR DISPOSAL OF THE FOLLOWING WASTE(S) LISTED IN PART I:

001 270640 DIATOMACEOUS EARTH FILTER
MEDIA WITH OIL, PLASTIC, & DIRT

002 249950 BIOLOGICAL SLUDGE, DOMESTIC
(SEWER SLUDGE)

003 279760 PLANT REFUSE, GENERAL MISC.

005 900880 SODIUM ALUMINATE

009 248930 CLARIFIER SLUDGE CONTAINING TR
ACE ORGANICS

010 913860 SOLVENTS, NON-HALOGENATED

011 910590 LABORATORY WASTES, MISC. ORGA
NIC LIQUID

012 981690 CARBON DISULFIDE

013 914990 N-BUTYL ALCOHOL

014 914250 ISOBUTYL ALCOHOL

015 911080 METHANOL

016 913640 PHENOL

017 910030 XYLENE/XYLOL

018 970490 SOIL, CONTAMINATED

019 915490 ORGANIC LIQUID AND WATER

020 115490 ORGANIC LIQUID AND WATER

INDUSTRIAL SOLID WASTE

Compliance Monitoring Inspection Report
Tanks Checklist (Rule 335.261-.267)

Section A - General

1. Are tanks presently used to treat or store waste? Yes ☒ No ☐
- a. If no, do not complete rest of form.
- b. If yes, check tanks. (Describe type of tank and indicate underground, above ground, or on-ground in comments sheet).
- c. Is there evidence that incompatible wastes have been placed in the tank? Yes ☐ No ☒
- (1) If yes, refer to 335.118(b) and explain in comments sheet.
- d. Check tank(s) for evidence of any ruptures, leaks or corrosion. Is facility compliant [335.264(a)(4)]? Yes ☐ No ☒
2. Are there any uncovered tanks? Yes ☐ No ☒
- a. If no, do not complete b. - e.
- b. If yes, do they have 2 feet (60 cm) freeboard? or N/A ☐ Yes ☐ No ¹ ☐
- c. A containment structure? (e.g. dike or trench equal to volume of 2 feet of tank) or N/A ☐ Yes ☐ No ¹ ☐
- d. A drainage control system? N/A ☐ Yes ☐ No ¹ ☐
- e. A diversion structure? (e.g. standby tank) N/A ☐ Yes ☐ No ¹ ☐
- NOTE 1: The structure in c, d or e must have a capacity that equals or exceeds the volume of the top 2 feet (60 cm) of the tank; any one yes answer for 2b, c, d or e indicates compliance.
3. Are any of the tanks continuous feed? Yes ☐ No ☒
- a. If yes, is it equipped with a means to stop inflow (e.g. waste feed cutoff or bypass to a stand-by tank)? Yes ☐ No ☐

Section B - Waste Analysis

1. Is the tank used to store one waste exclusively? Yes ☒ No ☐
- a. If no, what are the different wastes stored in the tank?
- _____
- _____
- _____
- _____

TDWR-

Page 9 of 30 of Group II

*(Changed 9/10/82, added *** note and reworded some questions)

**Note checklist questions to be noted or completed during on-site inspection

***No checked in this column indicates noncompliance.

- b. Are waste analyses and trial treatment or storage tests done on these different wastes?

NOTE 1: Not applicable for less than 90 day storage [335.69(a)(2)].

N/A ___ Yes ☒ No ^{***}___

- (1) If no, does he have written, documented information on similar storage or treatment of similar wastes?

N/A ___ Yes ___ No ___

- c. Are there records available of these wastes analyses in the operating record?

N/A ___ Yes ☒ No ___

Section C - Inspections (Where Present) 335.264

1. Do the records indicate the owner/operator inspects, where present, the following at least daily:

- a. Discharge control equipment (e.g. waste feed cut-off, bypass and/or drainage system)?

Yes ☒ No ___

- b. Monitoring equipment (e.g. pressure and temperature gages)?

Yes ☒ No ___

- c. Level of waste in each uncovered tank?

~~N/A~~ Yes ___ No ___

2. Do the records indicate the owner/operator inspects the following at least weekly:

- a. Construction materials of tanks for corrosion or leaks?

Yes ☒ No ___

- b. Construction materials of and area surrounding discharge confinement structures for erosion or signs of leakage?

Yes ☒ No ___

3. Is there a written inspection schedule (Rule 335.116)?

Yes ☒ No ___

- a. If yes, is the schedule kept at the site?

Yes ☒ No ___

- b. If no for 3 or 3a, explain in the comments sheet.

4. Is there evidence of ignitable wastes placed in tanks? Yes ☒ No ___

- a. If yes, do records indicate that they are treated, rendered, or mixed before or immediately after placement in the tank so it no longer meets the definition of ignitable? or

Yes ___ No ² ☒

- ** b. Is the waste protected from sources of ignition?

Yes ☒ No ² ___

- (1) If yes, use comments sheet to describe separation and confinement procedures.

- (2) If no, use comments sheet to describe sources of ignition. or

TDWR-

Page 10 of 30 of Group II

*(Changed 9/10/82, added *** note and 2 notes added)

**See Note on Page 9

***See Note on Page 9

- c. Is the tank used solely for emergencies?

Yes ___ No ² ___

NOTE 2: Only one of the three questions 4a, b, c answered yes indicates compliance.

5. Is there evidence of reactive wastes placed in tanks? Yes ___ No ☒

- a. If yes, do records indicate that they are treated rendered, or mixed before or immediately after placement in the tank so it no longer meets the definition of reactive? or

Yes ___ No ¹ ___

- **b. Is the waste protected from sources of reaction?

Yes ___ No ¹ ___

(1) If yes, use comments sheet to describe separation and confinement procedures.

(2) If no, use comments sheet to describe sources of reaction. or

- c. Is the tank used solely for emergencies?

Yes ___ No ¹ ___

NOTE 1: Only one of the three questions 5a, b, c answered yes indicates compliance.

6. Do the records indicate that incompatible wastes are placed in the same tank?

Yes ___ No ☒

- a. If yes, review 335.118(b) and explain in the comments sheet.

7. If a waste is to be placed in a tank that previously held an incompatible waste do operating records indicate that the tank was washed?

N/A Yes ___ No ___

- a. If yes, review 335.118(b) and describe washing procedures. _____

- b. Describe how it is possible for incompatible waste to be placed in the same tank. _____

NOTE: If the answer to Section A 2b-e and 3a, Section B 1b(1) and 1c, and Section C 1a-c, 2a, 2b, 3a, and 4a-c was no, explain in comments sheet.

8. Describe tank(s) site and indicate plat map location(s) and designation(s). Also describe size and capacity of each tank: See attached map

and comments

IDWR-

Page 11 of 30 of Group II

*(Changed 9/10/82)

**See Note on Page 9

***See Note on Page 9

Date Sept. 10, 1985Reg./Permit No. 30324COMMENTS SHEET

Section A / Paragraph d : The tank car shell had no secondary containment. A spill or leak from this tank would soak into the ground and or runoff into the (equalization basin) surface impoundments. According to Bob Lopez, Subwyd plans to close this tank.

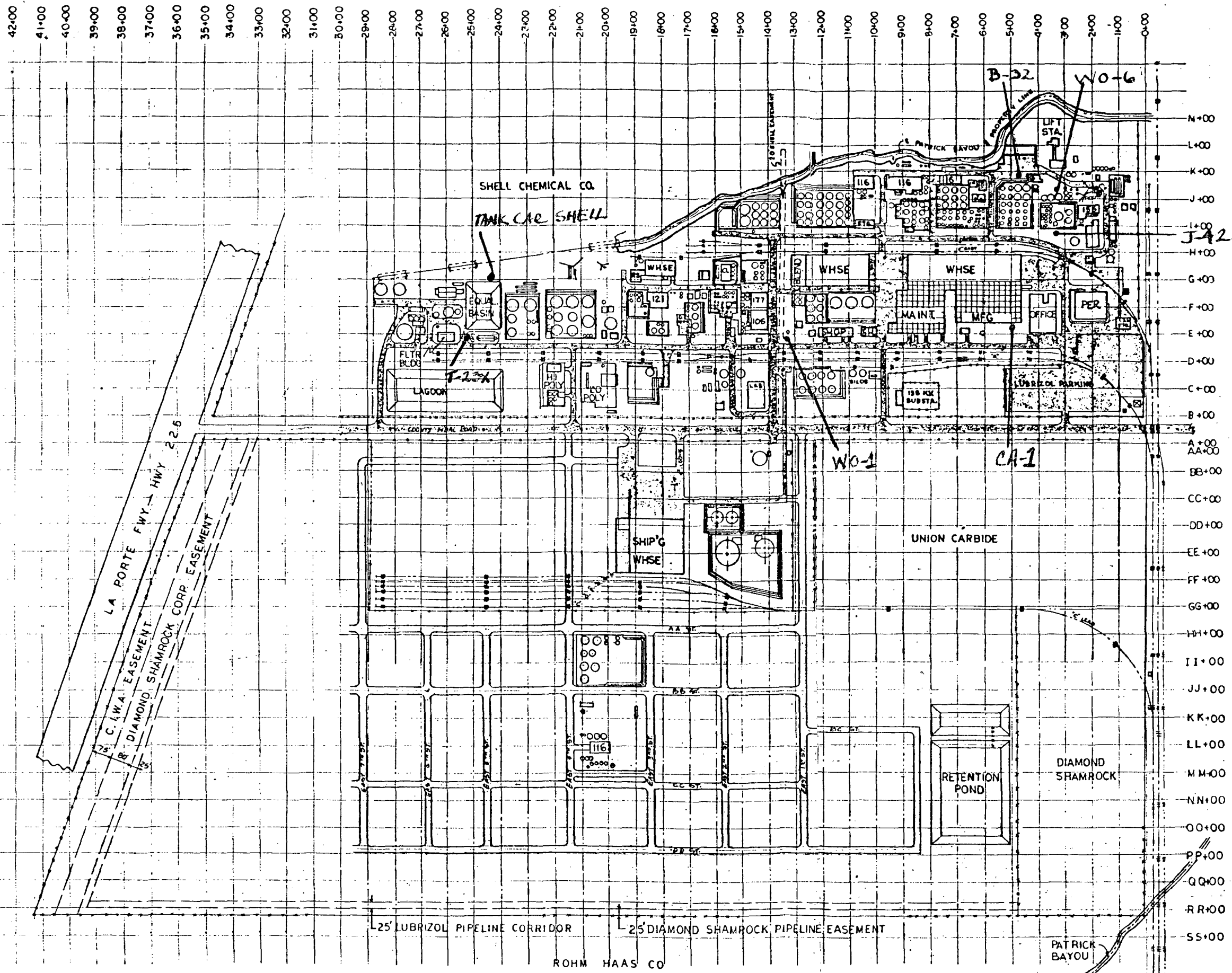
Section _____ / Paragraph _____ :
The tank farm area containing tank (T-23X) had inadequate secondary containment. A spill would run-off into the (equalization basin) surface impoundment.

Section C / Paragraph 8 :

Tank	Size	Waste Contained
WO-1	6000 gallons	no. 019
CA-1	18,000 gallons	no. 008 -
B-32	15,106 gallons	no. 010, 011 -
WO-6	8,400 gallons	no. 020 -
J-42	10,000 gallons	no. 008 -

Section _____ / Paragraph _____ :

Tank car Shell	8,000 gallons	no. 019
T-23X	12,000 gallons	no. 005



THE LUBRIZOL CORPORATION CLEVELAND, OHIO - HOUSTON PLANT			
DEEP TANK PLANT LAYOUT			
DESIGNED BY: HALL	DRAWN BY: [blank]	CHECKED BY: [blank]	DATE: 8-20-80
PROJECT NO: [blank]	SCALE: [blank]	REVISION: [blank]	PLANT NO: 25-070-009

INDUSTRIAL SOLID WASTE

Compliance Monitoring Inspection Report Surface Impoundments Checklist (TAC 335.281-.288) Class of Waste (P)

- Enforcement - litigation - (comments)
- Proposed closure -
- Groundwater Monitoring -

1. Are surface impoundments presently used to treat or store waste?
Yes ☒ No ☐
- a. If yes, inspect the impoundments.
- **2. Does the impoundment appear to maintain at least 2 feet (60 cm) of freeboard?
Yes ☐ No ☒
- **3. Check for evidence of overtopping of the dike. Is the facility compliant?
Yes ☒ No ☐
- **4. Check for evidence of seepage. Is the facility compliant?
Yes ☒ No ☐
5. Containment system for dyked or dammed impoundments (335.283)
 - **a. Does the earthen dike have a protective cover (e.g. grass, shale, rock) to minimize wind and water erosion?
Yes ☐ No ☒
6. What wastes are treated or stored in the impoundment? Process Wastewater
7. Are waste analyses and trial tests conducted on these wastes (chemical processing of a different hazardous waste or method only)? (pH only)
N/A ☒ Yes ☐ No ☒
 - a. If not, does the owner/operator have written documented information on similar treatment of similar wastes?
Yes ☐ No ☒
8. Is this information retained in the operating record?
N/A ☒ Yes ☐ No ☐
9. Is the impoundment inspected daily to check freeboard level?
Yes ☐ No ☒
10. Is the impoundment, dikes and vegetation surrounding the dike inspected weekly to detect leaks, deterioration or failures?
Yes ☐ No ☒

TDWR-

Page 3 of 30 of Group II

*(Changed 9/10/82, response format realigned, other minor changes)

**See Note on Page 1

***This response column indicates noncompliance.

11. Does the impoundment have a liner? Yes ☒ No ☐

a. If Yes, what type? clay - (3 feet of compacted clay)

b. If Yes, does it have a leachate collection and removal system? Yes ☐ No ☒

**12. Is there evidence of ignitable or reactive wastes placed in the impoundment? (by process knowledge) Yes ☐ No ☒

a. If Yes, explain in comments sheet [review 335.118(a)];

or
b. If Yes, is the impoundment used solely for emergencies? Yes ☐ No ☐

**13. Is there evidence of incompatible wastes placed in the impoundment [if yes, review 335.118(b)]? Yes ☐ No ☒

14. Are monitor wells required for this site? (Refer to Rule 335.191-.195 - Ground Water Monitoring) (Enforcement) Yes ☒ No ☐

a. Has owner/operator installed, operated and maintained a ground water monitoring system (unless waived) prior to 11/19/81? Yes ☒ No ☐

NOTE 1: Attach Ground Water Monitoring Report if answer to question 14 is yes.

15. Describe impoundment(s) site and indicate plat map, location(s) and designation(s). Also describe each impoundment's dimensions and capacity (acre-feet): See attached map. Capacity 1-39 Million
gallons

NOTE 2: If the answer is No for Nos. 5a, 7a, 8, 9, 10 and No. 14 after 11/19/81, explain in comments sheet.

TDWR-

Page 4 of 30 of Group II

*(Changed 9/10/82, response format realigned)

**See Note on Page 1

***See Note Page 3

Checklist Surface Impoundment

Date Sept. 10, 1985

Reg./Permit No. 30324

COMMENTS SHEET

Section 2, 5 / Paragraph _____: Some areas of the
impoundment did not appear to have 2 feet
of freeboard due to the condition of the dike.
The dike was in ill-repair

Section 7(d), 9, 10 / Paragraph _____: The (equalization basin)
impoundment is a subject under litigation.
There are no records indicating inspection
of freeboard, or dike area

Section _____ / Paragraph _____: Class of Waste -
Sept. 1981 inspection indicated the surface
impoundment to contain a hazardous waste due
to a pH of less than 2. Facility records indicate
pH above 2 since Oct. 15, 1981. The impoundment
has a brownish organic layer on the surface and

Section _____ / Paragraph _____: _____
an oily residue or sludge accumulation
on portions of the bank.

INDUSTRIAL SOLID WASTE

Compliance Monitoring Inspection Report Ground Water Monitoring Program (335.191-.195)

1. Ground Water Monitoring Status:

Detection _____ : quarterly sampling _____ ; semi annual sampling _____
 Alternate ☒ (date approved) Waiver _____ (date approved)
 Assessment _____ (date approved) Required but not monitoring _____

Presently negotiating an agreed final judgement.

Yes No Not Applicable

2. Has the following been installed in the uppermost aquifer around the waste management area(s):

At least one hydraulically upgradient well?

☒ _____

At least three hydraulically downgradient wells?

☒ _____

3. If the waste management area includes multiple waste management facilities, is each facility adequately monitored?

☒ _____

4. Provide a diagram locating each monitoring well and waste site(s). List depths, diameter and completion data on each well not included on the previous inspection.

5. Has an adequate ground water sampling and analysis plan been developed?

Date of evaluation: 9/10/85

If not, list deficiencies:

☒ _____

Is the plan followed?

*The wells were installed in Oct. 1984.
Only one Sampling event has occurred.*

6. If monitoring for the first year, are the samples analyzed for:

EPA drinking water standards?

Ground water quality parameters?

Ground water contamination parameters?

Are 4 replicate measurements made for each upgradient well sample?

Are ground water surface elevations determined at each well each sampling event?

7. Does the facility have an adequate Ground Water Quality Assessment Plan outline?

Date of evaluation: _____

TOWR-

Page 20 of 30 Group II

Revised 10/13/83

8. For facilities in their second or later year of ground water sampling and analysis:

	Yes	No	Not Applicable
Are wells sampled and analyzed annually for ground water quality parameters?	___	___	✓
Are wells sampled and analyzed semi-annually for ground water contamination parameters?	___	___	___
Are ground water surface elevations determined at each well for each sampling event?	___	___	___
Were ground water surface elevations evaluated annually to determine whether monitoring wells are properly placed?	___	___	___
Were changes to the monitoring system necessary, to maintain compliance with 335.192(a)?	___	___	___
If so, describe:			
Are 4 replicate measurements made for each upgradient and downgradient well sample?	___	___	___
If not, explain:			

9. Are statistical comparisons, using the Student's t-test at the 0.01 level of significance, performed:

Between the initial background mean and current upgradient well analyses for contaminated parameters? ___

Between the initial background mean and current downgradient well analyses for contamination parameters? ___

If there is more than one upgradient well, are all the background data combined resulting in one background mean with variance for each contamination parameter or is each upgradient well mean and variance compared separately with downgradient well analyses? Circle appropriate phrase.

10. No significant increases (or pH decreases) in contamination parameters been found in the:

Upgradient wells? ___

If no, did the company report the upgradient well change on the annual report form? ___

Downgradient wells? ___

	Yes	No	Not Applicable
11. If significant increases (or pH decreases) in downgradient wells were detected, did the company:			
Resample the "affected" well(s), split the sample in two and analyze for the respective changing contamination indicator(s)?	___	___	✓
Confirm the significant difference?	___	___	___
Notify the Executive Director within 7 days of confirmation?	___	___	___
Submit a certified ground water quality assessment plan within 15 days of notifying Executive Director?	___	___	___
12. If an assessment program is on-going, describe what has been completed so far.			
What is the expected completion date?			
13. Ground water analyses indicate no hazardous waste or hazardous waste constituents detected?			
(Comments) (Agreed Final judgement under negotiation)	✓	___	
If yes, was the original detection monitoring program reinstated?	___	___	
If no, has an approved quarterly ground water monitoring program been implemented?	___	___	
14. If the company is performing an alternate ground water monitoring program, is an adequate sampling and analysis plan followed?	___	___	
15. Are all wells sampled with the same equipment and procedures?	___	___	
Is sampling equipment cleaned between wells to prevent cross-contamination?	___	___	
16. Have records been kept of:			
Analyses for ground water parameters?	___	___	
Calculations of means and variances?	___	___	
Water surface elevations taken at each well each sampling event?	___	___	
Calculations of significant differences?	___	___	✓

16. continued

Yes No Not Applicable

Analyses of duplicate samples for contamination confirmation?

[Final judgement
being negotiated]

Analyses of samples taken as a result of implementing the Ground Water Quality Assessment Plan?

— — —

Results of Ground Water Quality Assessment Plan:

Rates of migration?

— — —

Concentration of hazardous waste and/or constituents thereof?

— — —

Analyses of quarterly ground water samples?

— — —

Comments - Copies of groundwater sample results attached.

* Note groundwater contamination in (EQ 2, EQ-3) see attached GC/MS sample results.

TEXAS DEPARTMENT OF HEALTH
GC/MS ANALYSIS REPORT
EPA PRIORITY POLLUTANTS

ANALYST: CRI HOCKER DATE: 12/10/84

TOW SAMPLE NUMBER: EH 5-143
TOW SAMPLE NUMBER: SW 03897

• ALL EMPTY SPACES BELOW INDICATE NONE DETECTED •

SAMPLE TYPE: WATER

SAMPLE CONDITION: INTACT

ACID EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM :

NAME	AMT	NAME	AMT	NAME	AMT
PHENOL	19000	4-CHLORO-3-CRESOL	<40	4-NITROPHENOL	<40
CHLOROPHENOL	trace	2,4,6-TRICHLOROPHENOL	↓	2,6-DINITRO-2-CRESOL	↓
2-NITROPHENOL	<40	2,4-DIMETHYLPHENOL	↓	PENTACHLOROPHENOL	↓
2,4-DICHLOROPHENOL	↓	2,4-DINITROPHENOL	↓		

NEUTRAL EXTRACTABLES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM :

NAME	AMT	NAME	AMT	NAME	AMT
N-NITROSO-N-DIETHYLAMINE	<20	ACENAPHTHYLENE	<20	FLUORANTHENE	<20
bis-(2-CHLOROETHYL) ETHER	↓	DIETHYL PHTHALATE	↓	PYRENE	↓
1,3-DICHLOROBENZENE	↓	2,6-DINITROTOLUENE	↓	BENZIDINE	↓
1,4-DICHLOROBENZENE	↓	ACENAPHTHENE	trace	DUTYLBENZYL PHTHALATE	↓
1,2-DICHLOROBENZENE	↓	2,4-DINITROTOLUENE	<20	BENZ(a)ANTHRACENE	↓
bis-(2-CHLOROISOPROPYL) ETHER	↓	FLUORENE	↓	CHRYSENE	↓
HEXACHLOROETHANE	↓	4-CHLOROPHENYL PHENYL ETHER	↓	3,3'-DICHLOROBENZIDINE	↓
N-NITROSO-DI-n-PROPYLAMINE	↓	DIETHYL PHTHALATE	↓	bis-(2-ETHYLHEXYL) PHTHALATE	↓
NITROBENZENE	↓	DIPHENYLAMINE	↓	DI-n-OCTYL PHTHALATE	↓
ISOPHORBONE	↓	N-NITROSDIPHENYLAMINE	↓	BENZO(j)FLUORANTHENE	↓
bis-(2-CHLOROETHOXY)METHANE	↓	1,2-DIPHENYLHYDRAZINE	↓	BENZO(k)FLUORANTHENE	↓
1,2,4-TRICHLOROBENZENE	↓	4-BROMOPHENYL PHENYL ETHER	↓	BENZO(a)PYRENE	↓
NAPHTHALENE	44	HEXACHLOROBENZENE	↓	INDENO(1,2,3-cd)PYRENE	↓
HEXACHLOROBTADIENE	<20	PHENANTHRENE	↓	DIBENZO(a,h)ANTHRACENE	↓
HEXACHLOROCTCLOPENTADIENE	↓	ANTHRACENE	↓	BENZO(ghi)PERYLENE	↓
2-CHLORONAPHTHALENE	↓	DI-n-BUTYL PHTHALATE	↓		

PESTICIDES IN (CHECK ONE) (✓) MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM :

NAME	AMT	NAME	AMT	NAME	AMT
alpha-BHC	<40	ALDRIN	<40	Beta-ENDOSULFAN	<40
gamma-BHC	↓	4,4'-DDE	↓	ENDOSULFAN SULFATE	↓
Beta-BHC	↓	DELDRIN	↓	ENDRIN	↓
delta-BHC	↓	4,4'-DDD	↓	alpha-BHC endosulfan	↓
HEPTACHLOR	↓	4,4'-DDT	↓	HEPTACHLOR EPOXIDE	↓
ENDRIN ALDEHYDE	↓				

VOLATILE ORGANICS IN (CHECK ONE) () MICROGRAMS/LITER () MILLIGRAMS/KILOGRAM :

NAME	AMT	NAME	AMT	NAME	AMT
CHLOROMETHANE	---	1,2-DICHLOROETHANE	---	1,1,2-TRICHLOROETHANE	---
BROMOMETHANE	---	CARBON TETRACHLORIDE	---	2-CHLOROETHYL VINYL ETHER	---
CHLORIDE	---	BROMODICHLOROETHANE	---	TRICHLOROETHYLENE	---
BROMIDE	---	BENZENE	---	BROMOFORM	---
CHLOROMETHANE	---	DIBROMOCHLOROETHANE	---	TOLUENE	---
		1,1,1-TRICHLOROETHANE	---	ETHYL BENZENE AND/OR n-XYLENE	---
		1,2-DICHLOROPROPANE	---	1,1,2,2-TETRACHLOROETHANE	---
		trans-1,3-DICHLOROPROPYLENE	---	TETRACHLOROETHYLENE	---
		cis-1,3-DICHLOROPROPYLENE	---	CHLOROBENZENE	---

TENTATIVE IDENTIFICATION OF THE TEN LARGEST NON PRIORITY POLLUTANT PEAKS
BY COMPARISON WITH EPA/NIH MASS SPECTRAL LIBRARY. QUANTITATION AS D10-ANTHRACENE
IS PROVIDED, AND THE VALUES SHOULD BE REGARDED AS APPROXIMATE.

TENTATIVE
COMPOUND
IDENTIFICATION

APPROXIMATE CONCENTRATIONS
AS D-10 ANTHRACENE
(✓) MICROGRAMS/LITER
() MILLIGRAMS/KILOGRAM

4-(1,1-dimethylethyl)-phenol 1000
4-methyl-3H-1,2-dithiole-3-thione 1000

COMMENTS AND OTHER REQUESTED ANALYSES:

ALSO QUANTITATED:

p + m xylenes 780 ug/L
2-methyl naphthalene 52 ug/L
1-methyl naphthalene 66 ug/L
biphenyl 31 ug/L
p-cresol 150 ug/L
o-cresol 130 ug/L

benzoic acid present.
Several major peaks not identified.

SIGNATURE

DATE

Richard A. Albert 12/19/84

* Note - EQ-3 analysis

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536

REPORT DATE: 05/20/85

ATTENTION: JAMES A CAMP

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041130
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

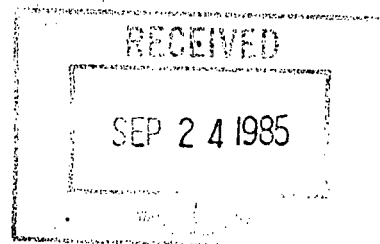
SAMPLE IDENTIFICATION: AE-2

04/23

TEST	DETERMINATION	RESULTS	UNITS
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	500,000	col/100ml
M030	Arsenic (As)	(0.01	mg/l
M040	Barium (Ba)	0.9	mg/l
M090	Cadmium (Cd)	(0.005	mg/l
M140	Chromium (Cr)	(0.03	mg/l
M200	Lead (Pb)	(0.05	mg/l
M250	Mercury (Hg)	(0.0002	mg/l
M290	Selenium (Se)	(0.01	mg/l
M300	Silver (Ag)	(0.02	mg/l
OH10	2,4-D	(100	ug/l
OH15	2,4,5 TP(Silvex)	(10	ug/l
OP51	Lindane	(4	ug/l
OP52	Endrin	(0.2	ug/l
OP53	Methoxychlor	(100	ug/l
OP54	Toxaphene	(5	ug/l
W300	Fluoride, Soluble (F)	1.2	mg/l
W390	Nitrate (N)	(0.1	mg/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	0.88	mg/l
M240	Manganese (Mn)	0.32	mg/l
M310	Sodium (Na)	370	mg/l
W130	Chloride (Cl)	900	mg/l
W500	Phenolics	0.13	mg/l
W730	Sulfate, Turbidimetric (SO4)	43	mg/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	10	mg/l
W315	Halogens, Total Organic (TOX)	92	ug/l
W490	pH	7.4	
W700	Specific Conductance @ 25C	19,000	umhos/cm

COMMENTS:

Reviewed and Approved by: DM



LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536

REPORT DATE: 05/20/85

ATTENTION: JAMES A CAMP

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041131
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

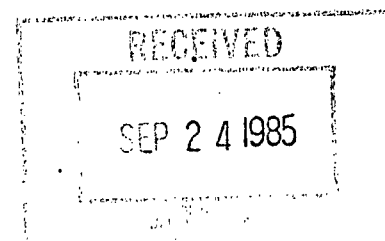
SAMPLE IDENTIFICATION: EQ-1

04/23

TEST	DETERMINATION	RESULTS	UNITS
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	0	col/100ml
M030	Arsenic (As)	0.09	ug/l
M040	Barium (Ba)	7.0	ug/l
M090	Cadmium (Cd)	(0.005	ug/l
M140	Chromium (Cr)	(0.03	ug/l
M200	Lead (Pb)	(0.05	ug/l
M250	Mercury (Hg)	(0.0002	ug/l
M290	Selenium (Se)	(0.01	ug/l
M300	Silver (Ag)	(0.02	ug/l
OH10	2,4-D	(100	ug/l
OH15	2,4,5 TP(Silvex)	(10	ug/l
OP51	Lindane	(4	ug/l
OP52	Endrin	(0.2	ug/l
OP53	Methoxychlor	(100	ug/l
OP54	Toxaphene	(5	ug/l
W300	Fluoride, Soluble (F)	0.5	ug/l
W390	Nitrate (N)	0.4	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	0.02	ug/l
M240	Manganese (Mn)	0.68	ug/l
M310	Sodium (Na)	5500	ug/l
W130	Chloride (Cl)	12,000	ug/l
W500	Phenolics	25	ug/l
W730	Sulfate, Turbidimetric (SO4)	(2	ug/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	260	ug/l
W315	Halogens, Total Organic (TOX)	910	ug/l
W490	pH	6.0	
W700	Specific Conductance @ 25C	40,000	umhos/cm

COMMENTS:

Reviewed and Approved by: DM



LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536

REPORT DATE: 05/20/85

ATTENTION: JAMES A CAMP

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041132
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

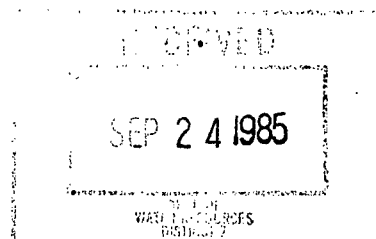
SAMPLE IDENTIFICATION: EQ-2

04/23

TEST	DETERMINATION	RESULTS	UNITS
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	TNTC	col/100ml
M030	Arsenic (As)	< 0.01	ug/l
M040	Barium (Ba)	10	ug/l
M090	Cadmium (Cd)	< 0.005	ug/l
M140	Chromium (Cr)	< 0.03	ug/l
M200	Lead (Pb)	< 0.05	ug/l
M250	Mercury (Hg)	0.0011	ug/l
M290	Selenium (Se)	< 0.01	ug/l
M300	Silver (Ag)	< 0.02	ug/l
OH10	2,4-D	< 100	ug/l
OH15	2,4,5 TP(Silvex)	< 10	ug/l
OP51	Lindane	< 4	ug/l
OP52	Endrin	< 0.2	ug/l
OP53	Methoxychlor	< 100	ug/l
OP54	Toxaphene	< 5	ug/l
W300	Fluoride, Soluble (F)	0.8	ug/l
W390	Nitrate (N)	0.4	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	53	ug/l
M240	Manganese (Mn)	7.3	ug/l
M310	Sodium (Na)	7300	ug/l
W130	Chloride (Cl)	23,000	ug/l
W500	Phenolics	19	ug/l
W730	Sulfate, Turbidimetric (SO4)	< 2	ug/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	300	ug/l
W315	Halogens, Total Organic (TOX)	830	ug/l
W490	pH	6.2	
W700	Specific Conductance @ 25C	69,000	umhos/cm

COMMENTS: TNTC=Too numerous to count.

Reviewed and Approved by: DH





Laboratory Services Division
900 Gemini Avenue
Houston, TX 77058

REMIT TO:
900 Gemini Avenue
Houston, TX 77058

713 - 488-1810

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536
ATTENTION: JAMES A CAMP

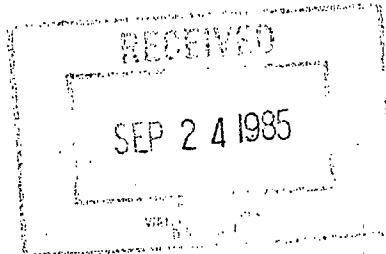
REPORT DATE: 05/20/85

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
0110	VOLATILES-PP IN WATER		
DV01	Acrolein	< 10,000	ug/l
DV02	Acrylonitrile	< 10,000	ug/l
DV03	Benzene	< 1000	ug/l
DV05	Bromoform	< 1000	ug/l
DV06	Carbon tetrachloride	< 1000	ug/l
DV07	Chlorobenzene	< 1000	ug/l
DV08	Dibromochloromethane	< 1000	ug/l
DV09	Chloroethane	< 1000	ug/l
DV10	2-Chloroethylvinyl ether	< 1000	ug/l
DV11	Chloroform	< 1000	ug/l
DV12	Bromodichloromethane	< 1000	ug/l
DV13	trans-1,3-Dichloropropene*	< 1000	ug/l
DV14	1,1-Dichloroethane	< 1000	ug/l
DV15	1,2-Dichloroethane	< 1000	ug/l
DV16	1,1-Dichloroethene	< 1000	ug/l
DV17	1,2-Dichloropropane	< 1000	ug/l
DV18	cis-1,3-Dichloropropene*	< 1000	ug/l
DV19	Ethylbenzene	< 1000	ug/l
DV20	Methyl bromide	< 1000	ug/l
DV21	Methyl chloride	< 1000	ug/l
DV22	Methylene chloride	< 1000	ug/l
DV23	1,1,2,2-Tetrachloroethane	< 1000	ug/l
DV24	Tetrachloroethene	< 1000	ug/l
DV25	Toluene	< 1000	ug/l
DV26	trans-1,2-Dichloroethene	< 1000	ug/l
DV27	1,1,1-Trichloroethane	< 1000	ug/l
DV28	1,1,2-Trichloroethane	< 1000	ug/l
DV29	Trichloroethene	< 1000	ug/l
DV31	Vinyl chloride	< 1000	ug/l
0120	ACID EXTRACTABLES		
0A01	2-Chlorophenol	< 500	ug/l



PAGE NO: 1

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501

NUS SAMPLE NO: 25041133

VENDOR NO: 01921401

WORK ORDER NO: 53680

DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
DA02	2,4-Dichlorophenol	(500	ug/l
DA03	2,4-Dimethylphenol	(500	ug/l
DA04	2-Methyl-4,6-dinitrophenol	(1000	ug/l
DA05	2,4-Dinitrophenol	(2500	ug/l
DA06	2-Nitrophenol	(1000	ug/l
DA07	4-Nitrophenol	(2500	ug/l
DA08	4-Chloro-3-methylphenol	(500	ug/l
DA09	Pentachlorophenol	(500	ug/l
DA10	Phenol	7700	ug/l
DA11	2,4,6-Trichlorophenol	(500	ug/l
DE30	Acid Extraction-Water		
0130	BASE NEUTRAL EXTRACTABLES		
DB01	Acenaphthene	(500	ug/l
DB02	Acenaphthylene	(500	ug/l
DB03	Anthracene	(500	ug/l
DB04	Benzidine	(2000	ug/l
DB05	Benzo(a)anthracene	(500	ug/l
DB06	Benzo(a)pyrene	(1000	ug/l
DB07	Benzo(b)fluoranthene	(1000	ug/l
DB08	Benzo(ghi)perylene	(1000	ug/l
DB09	Benzo(k)fluoranthene	(1000	ug/l
DB10	Bis(2-chloroethoxy)methane	(500	ug/l
DB11	Bis(2-chloroethyl)ether	(500	ug/l
DB12	Bis(2-chloroisopropyl)ether	(500	ug/l
DB13	Bis(2-ethylhexyl)phthalate	(500	ug/l
DB14	4-Bromophenyl phenyl ether	(500	ug/l
DB15	Benzyl butyl phthalate	(500	ug/l
DB16	2-Chloronaphthalene	(500	ug/l
DB17	4-Chlorophenyl phenyl ether	(500	ug/l
DB18	Chrysene	(500	ug/l
DB19	Dibenzo(a,h)anthracene	(1000	ug/l
DB20	1,2-Dichlorobenzene	(500	ug/l

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SEP 24 1985

PAGE NO: 2



LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION
ADDRESS: P. O. BOX 158
DEER PARK, TX 77536

REPORT DATE: 05/20/85

ATTENTION: JAMES A CAMP

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
0821	1,3-Dichlorobenzene	(500	ug/l
0822	1,4-Dichlorobenzene	(500	ug/l
0823	3,3'-Dichlorobenzidine	(1000	ug/l
0824	Diethyl phthalate	(500	ug/l
0825	Dimethyl phthalate	(500	ug/l
0826	Di-n-butyl phthalate	(500	ug/l
0827	2,4-Dinitrotoluene	(1000	ug/l
0828	2,6-Dinitrotoluene	(1000	ug/l
0829	Di-n-octyl phthalate	(500	ug/l
0830	1,2-Diphenylhydrazine(Azobz)	(500	ug/l
0831	Fluoranthene	(500	ug/l
0832	Fluorene	(500	ug/l
0833	Hexachlorobenzene	(500	ug/l
0834	Hexachlorobutadiene	(500	ug/l
0835	Hexachloro-cyclopentadiene	(500	ug/l
0836	Hexachloroethane	(500	ug/l
0837	Indeno(1,2,3-cd)pyrene	(1000	ug/l
0838	Isophorone	(500	ug/l
0839	Naphthalene	(500	ug/l
0840	Nitrobenzene	(500	ug/l
0841	N-Nitrosodimethylamine	(500	ug/l
0842	N-Nitrosodi-n-propylamine	(500	ug/l
0843	N-Nitrosodiphenylamine	(500	ug/l
0844	Phenanthrene	(500	ug/l
0845	Pyrene	(500	ug/l
0846	1,2,4-Trichlorobenzene	(500	ug/l
0E25	Base Neutral Extraction-Water		
0D49	GC/MS Base Neut. Lib. Search		
0D50	GC/MS Acid Lib. Search		
0F30	GC/MS Volatile Lib. Search		
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	0	col/100ml

SEP 24 1985

PAGE NO: 3

LAB ANALYSIS REPORT

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DEER PARK, TX 77536
ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501
NUS SAMPLE NO: 25041133
VENDOR NO: 01921401
WORK ORDER NO: 55680
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
M030	Arsenic (As)	< 0.01	ug/l
M040	Barium (Ba)	8.0	ug/l
M090	Cadmium (Cd)	< 0.005	ug/l
M140	Chromium (Cr)	0.04	ug/l
M200	Lead (Pb)	< 0.05	ug/l
M250	Mercury (Hg)	< 0.0002	ug/l
M290	Selenium (Se)	< 0.01	ug/l
M300	Silver (Ag)	< 0.02	ug/l
OH10	2,4-D	< 100	ug/l
OH15	2,4,5 TP(Silvex)	< 10	ug/l
DP51	Lindane	< 4	ug/l
DP52	Endrin	< 0.2	ug/l
DP53	Methoxychlor	< 100	ug/l
DP54	Toxaphene	< 5	ug/l
W300	Fluoride, Soluble (F)	0.6	ug/l
W390	Nitrate (N)	0.5	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	91	ug/l
M240	Manganese (Mn)	10	ug/l
M310	Sodium (Na)	8700	ug/l
W130	Chloride (Cl)	14,000	ug/l
W500	Phenolics	14	ug/l
W730	Sulfate, Turbidimetric (SO4)	4	ug/l
W311	RCRA UPGRADIENT CONTAMINATION		
W101	Carbon, Total Organic(TOC)1	250	ug/l
W102	Carbon, Total Organic(TOC)2	240	ug/l
W103	Carbon, Total Organic(TOC)3	250	ug/l
W104	Carbon, Total Organic(TOC)4	250	ug/l
W316	Halogens, Total Organic (TOX)1	790	ug/l
W317	Halogens, Total Organic (TOX)2	820	ug/l
W318	Halogens, Total Organic (TOX)3	960	ug/l
W319	Halogens, Total Organic (TOX)4	950	ug/l

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PAGE NO: 4



LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501

NUS SAMPLE NO: 25041133

VENDOR NO: 01921401

WORK ORDER NO: 55680

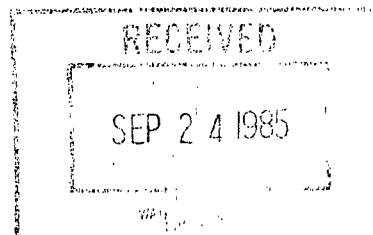
DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-3

04/23

TEST	DETERMINATION	RESULTS	UNITS
W491	pH - 1	6.1	
W492	pH - 2	6.1	
W493	pH - 3	6.1	
W494	pH - 4	6.1	
W701	Specific Conductance @ 25C - 1	40,000	uahos/cm
W702	Specific Conductance @ 25C - 2	40,000	uahos/cm
W703	Specific Conductance @ 25C - 3	40,000	uahos/cm
W704	Specific Conductance @ 25C - 4	40,000	uahos/cm

COMMENTS:



Reviewed and Approved by: DM

PAGE NO: 5

LAB ANALYSIS REPORT

CLIENT NAME: LUBRIZOL CORPORATION

ADDRESS: P. O. BOX 158

DEER PARK, TX 77536

ATTENTION: JAMES A CAMP

REPORT DATE: 05/20/85

NUS CLIENT NO: 282501

NUS SAMPLE NO: 25041129

VENDOR NO: 01921401

WORK ORDER NO: 55680

DATE RECEIVED: 04/24/85

SAMPLE IDENTIFICATION: EQ-4

04/23

TEST	DETERMINATION	RESULTS	UNITS
W290	RCRA GROUNDWATER-SUITABILITY		
BA20	Total Coliform - MF	0	col/100ml
M030	Arsenic (As)	(0.01	ug/l
M040	Barium (Ba)	1.2	ug/l
M090	Cadmium (Cd)	(0.005	ug/l
M140	Chromium (Cr)	(0.03	ug/l
M200	Lead (Pb)	(0.05	ug/l
M250	Mercury (Hg)	(0.0002	ug/l
M290	Selenium (Se)	(0.01	ug/l
M300	Silver (Ag)	(0.02	ug/l
OH10	2,4-D	(100	ug/l
OH15	2,4,5 TP(Silvex)	(10	ug/l
OP51	Lindane	(4	ug/l
OP52	Endrin	(0.2	ug/l
OP53	Methoxychlor	(100	ug/l
OP54	Toxaphene	(5	ug/l
W300	Fluoride, Soluble (F)	0.6	ug/l
W390	Nitrate (N)	(0.1	ug/l
W300	RCRA GROUNDWATER - QUALITY		
M190	Iron, Total (Fe)	0.07	ug/l
M240	Manganese (Mn)	(0.02	ug/l
M310	Sodium (Na)	760	ug/l
W130	Chloride (Cl)	2000	ug/l
W500	Phenolics	0.8	ug/l
W730	Sulfate, Turbidimetric (SO4)	47	ug/l
W310	RCRA GROUNDWATER-CONTAMINATION		
W100	Carbon, Total Organic (TOC)	27	ug/l
W315	Halogens, Total Organic (TOX)	230	ug/l
W490	pH	11.5	
W700	Specific Conductance @ 25C	24,000	umhos/cm

COMMENTS:

Reviewed and Approved by: DM



A Halliburton Company

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SEP 24 1985

THE LUBRIZOL CORPORATION

29400 LAKELAND BOULEVARD WICKLIFFE, OHIO 44092
216/943-4200

ADDRESS REPLY TO:
HOUSTON PLANT
P. O. BOX 158
DEER PARK, TEXAS 77536-0158

RGC-486-84

December 28, 1984

-CERTIFIED MAIL-
RETURN RECEIPT REQUESTED

Texas Department of Water Resources
P. O. Box 13087, Capitol Station
Austin, TX 78711

Attention: Allen L. Messenger, Head
Disposal Facilities Unit
Solid Waste Section

Reference: ISW Registration No. 30324
Closure of Hazardous Waste Management Units

Dear Mr. Messenger:

Please find attached the Monitor Well Installation Results and Ground Water Analyses for those wells installed around the Wastewater Equalization Basin. The discussion regarding these wells and this facility component is organized in the attached Appendix as follows:

- I. Site Geology
- II. Site Hydrogeology
- III. Results of Study
- IV. Proposal for Further Work

I reiterate the statement made in Lubrizols July 23, 1984, submission to TDWR that Lubrizol is providing information to TDWR, without waiving any legal arguments, but in the spirit of cooperation. In furtherance of this cooperation, it is requested that a meeting take place in your offices to discuss the attached results and Lubrizols future plans. If you have no objection, I will call Dwight Russell of your staff during the week of January 7, 1985, to coordinate the specific time of the meeting. In the interim, should you have any questions please call me at your convenience.

Yours truly,

THE LUBRIZOL CORPORATION

R. G. Copes

R. G. Copes
Senior Environmental
Control Engineer

JAN 19 1985

RGC:ms 0411C
Attachments

I. Site Geology

The Lubrizol Corporation's Deer Park Plant lies within the Gulf Coast Basin. The site geology is typical of the Beaumont Formation with high plasticity, low permeability clays (primarily CL) extending to a thickness of approximately 400 ft. (see groundwater well boring log, Attachment I). Discontinuous sand pockets or "lenses" are present in the uppermost strata at depths of 15 to 30 feet, as indicated by borings in the vicinity of the Equalization Basin. These sands are typically sandy silts or very fine silty sands.

II. Site Hydrogeology

The uppermost, usable aquifer in the site area is the Upper Chicot Aquifer located at a depth of approximately 400 feet. Shallow ground water flow is generally north and west towards Patrick Bayou (See Figure 5, "Potentiometric Map", Attachment II).

III. Results of Study

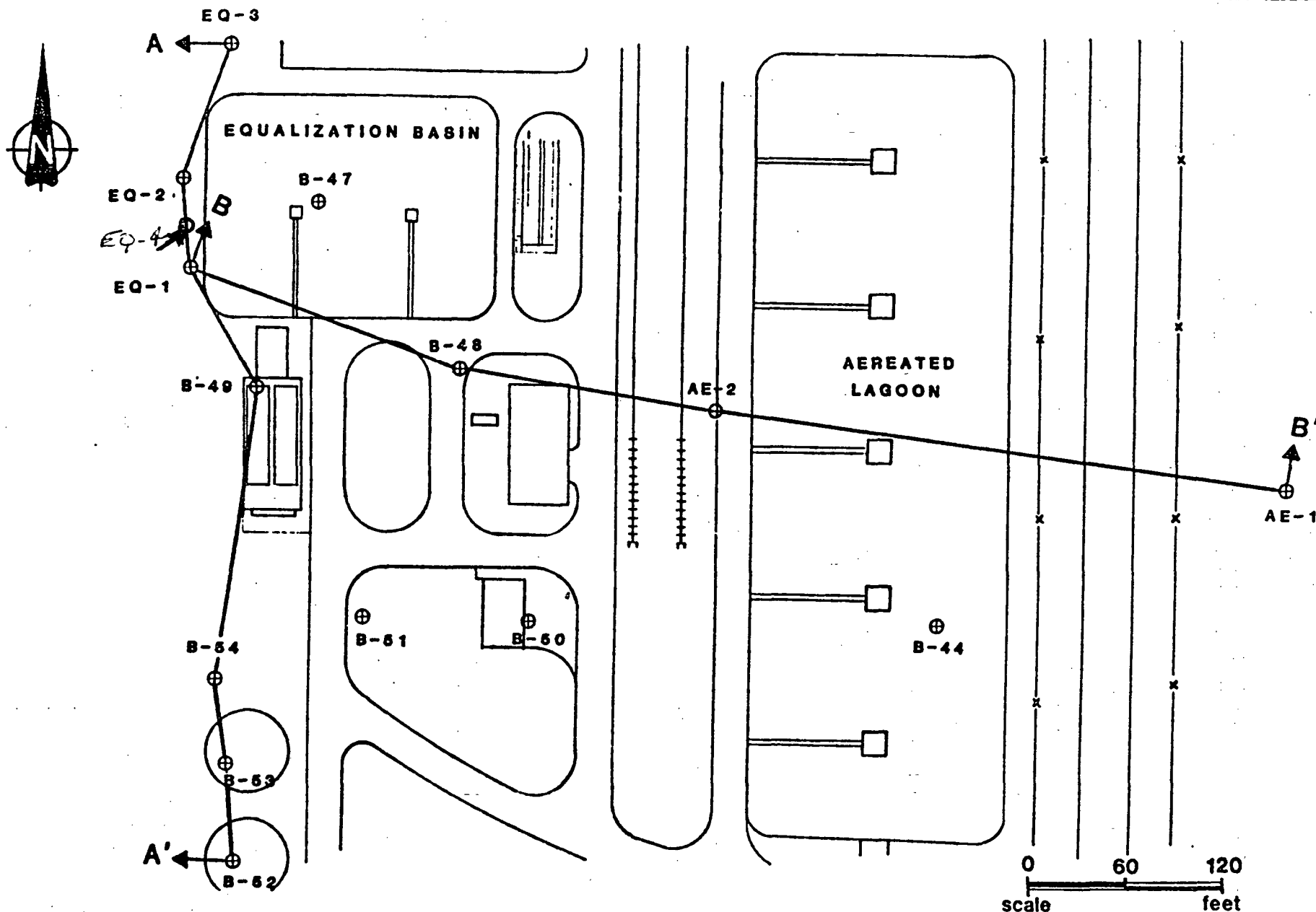
All information regarding the monitor wells, including well location, boring logs, and installation procedures is contained in Attachment II.

The ground water analytical results are summarized as follows:

	<u>AE-1</u>	<u>AE-2</u>	<u>EQ-1</u>	<u>EQ-2</u>	<u>EQ-3</u>
Phenol, mg/L	0.02	0.02	0.02	0.02	21
Total Organic Carbon, mg/L	2	13	206	273	241
Inorganic Chloride, mg/L	101	2,725	9,700	11,500	11,300
Sulfate, mg/L	12	99	8	5	5
Total Organic Halide, mg/L	0.18	0.29	1.0	1.5	1.6
Iron, mg/L	0.10	0.17	56	35	59
Manganese, mg/L	0.10	1.04	3.3	5.2	8.8
Sodium, mg/L	144	1,200	4,900	6,000	5,700
pH	7.4	7.1	6.8	6.9	6.9
Conductivity (micromhos/cm)	1,000	9,000	30,000	32,000	30,000

IV. Proposal for Further Work

- A. Additional borings to refine knowledge of ground water flow patterns - Attachment III, "Location of Proposed Borings", shows the planned locations for six new hollow stem auger borings. Ground water samples will be taken from these borings and analyzed for Total Organic Carbon as a crude measure of ground water quality. Each boring will be equipped with a one-inch diameter piezometer to measure ground water levels. The water quality and water level in these borings will be used as a guide for the location of any additional borings. A new potentiometric map will be developed using this additional information.



EQ-1
 ⊕ LAW ENGINEERING MONITORING WELL.
 ● SOUTHERN INSPECTION SERVICE BORING.

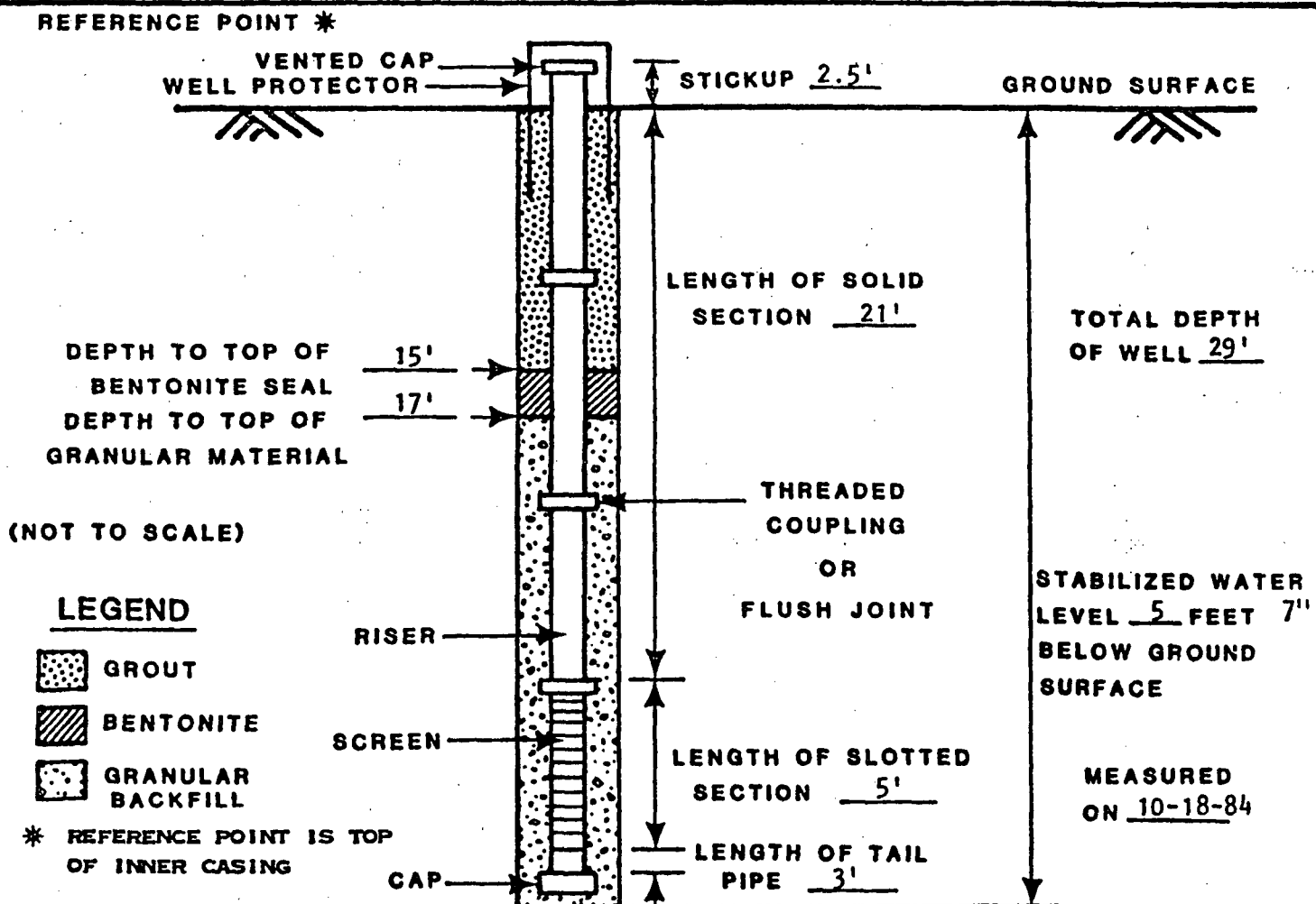


LAW ENGINEERING TESTING COMPANY
 HOUSTON TEXAS
 LUBRIZOL CORPORATION
 DEER PARK, TEXAS

PROJECT
 FIGURE 2
 LOCATION of BORINGS, MONITORING WELLS and CROSS SECTIONS
 LAW PROJECT No. HT-1286-84W

TYPE II MONITORING WELL INSTALLATION RECORD

JOB NAME <u>Lubrizol</u>	JOB NUMBER <u>HT-1286</u>
WELL NUMBER <u>AE-1</u>	INSTALLATION DATE <u>10-08-84</u>
LOCATION <u>AA+62.5, 27+68.0</u>	
GROUND SURFACE ELEVATION <u>34.75</u>	REFERENCE POINT ELEVATION <u>37.25</u>
GRANULAR BACKFILL MATERIAL <u>Clemtex #2</u>	SLOT SIZE <u>.015"</u>
SCREEN MATERIAL <u>SCHD. 40 PVC</u>	SCREEN DIAMETER <u>3"</u>
RISER MATERIAL <u>SCHD. 40 PVC</u>	RISER DIAMETER <u>3"</u>
DRILLING TECHNIQUE <u>Rotary Wash</u>	DRILLING CONTRACTOR <u>LETCo</u>
BOREHOLE DIAMETER <u>6"</u>	LAW ENGINEERING <u>R.H. Long</u>
LOCK BRAND _____	FIELD REPRESENTATIVE _____
KEY CODE/COMBINATION _____	SIZE/MODEL _____

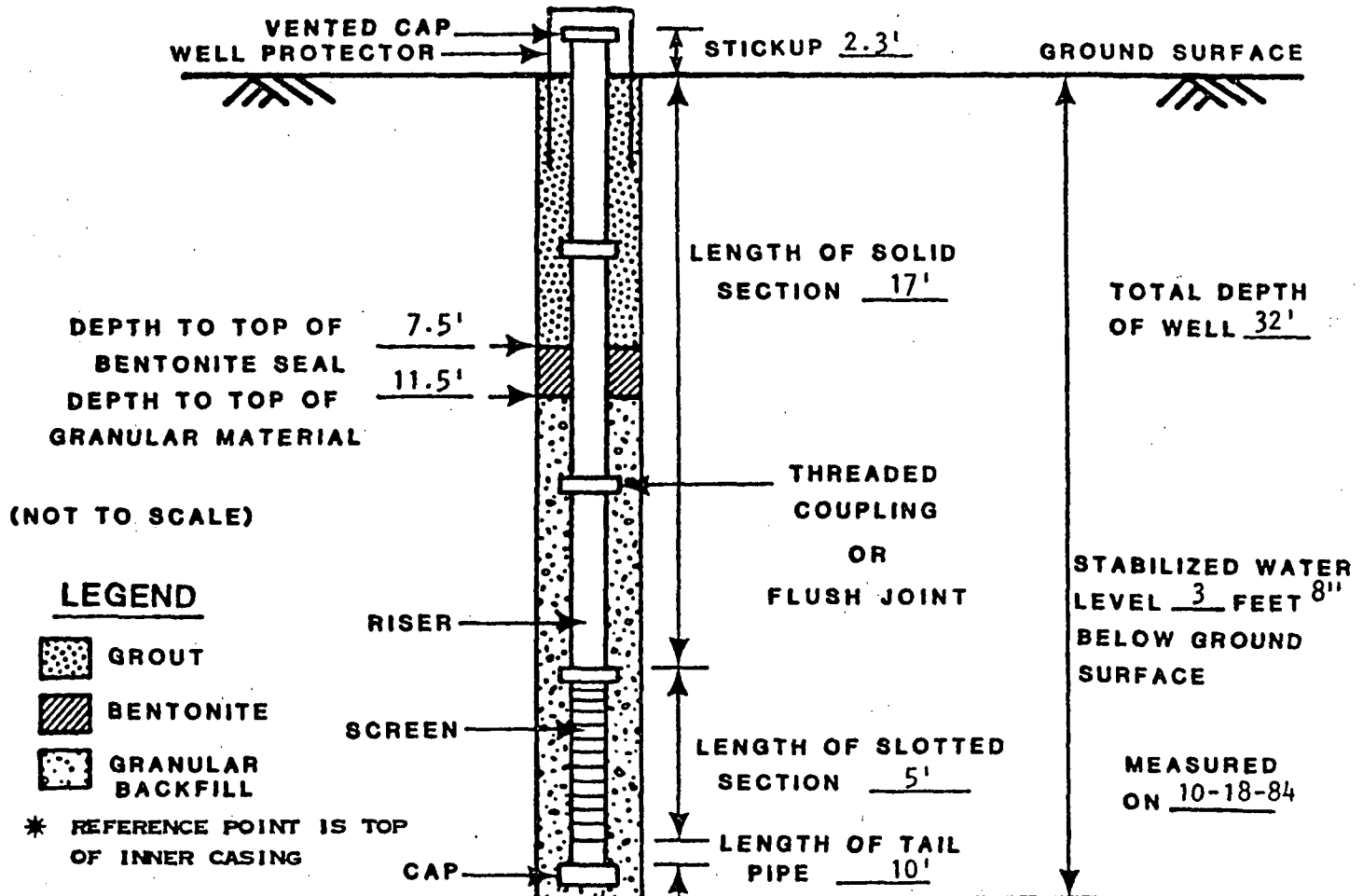


LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

TYPE II MONITORING WELL INSTALLATION RECORD

JOB NAME <u>Lubrizol</u>	JOB NUMBER <u>HT-1286</u>
WELL NUMBER <u>AE-2</u>	INSTALLATION DATE <u>10-09-84</u>
LOCATION <u>c+97.25, 25+76</u>	
GROUND SURFACE ELEVATION <u>34.75</u>	REFERENCE POINT ELEVATION <u>37.0</u>
GRANULAR BACKFILL MATERIAL <u>Clemtex #2</u>	SLOT SIZE <u>.015"</u>
SCREEN MATERIAL <u>SCHD. 40 PVC</u>	SCREEN DIAMETER <u>3"</u>
RISER MATERIAL <u>SCHD. 40 PVC</u>	RISER DIAMETER <u>3"</u>
DRILLING TECHNIQUE <u>Rotary Wash</u>	DRILLING CONTRACTOR <u>LETCo</u>
BOREHOLE DIAMETER <u>6"</u>	LAW ENGINEERING <u>R.H. Long</u>
LOCK BRAND _____	FIELD REPRESENTATIVE _____
KEY CODE/COMBINATION _____	SIZE/MODEL _____

REFERENCE POINT *

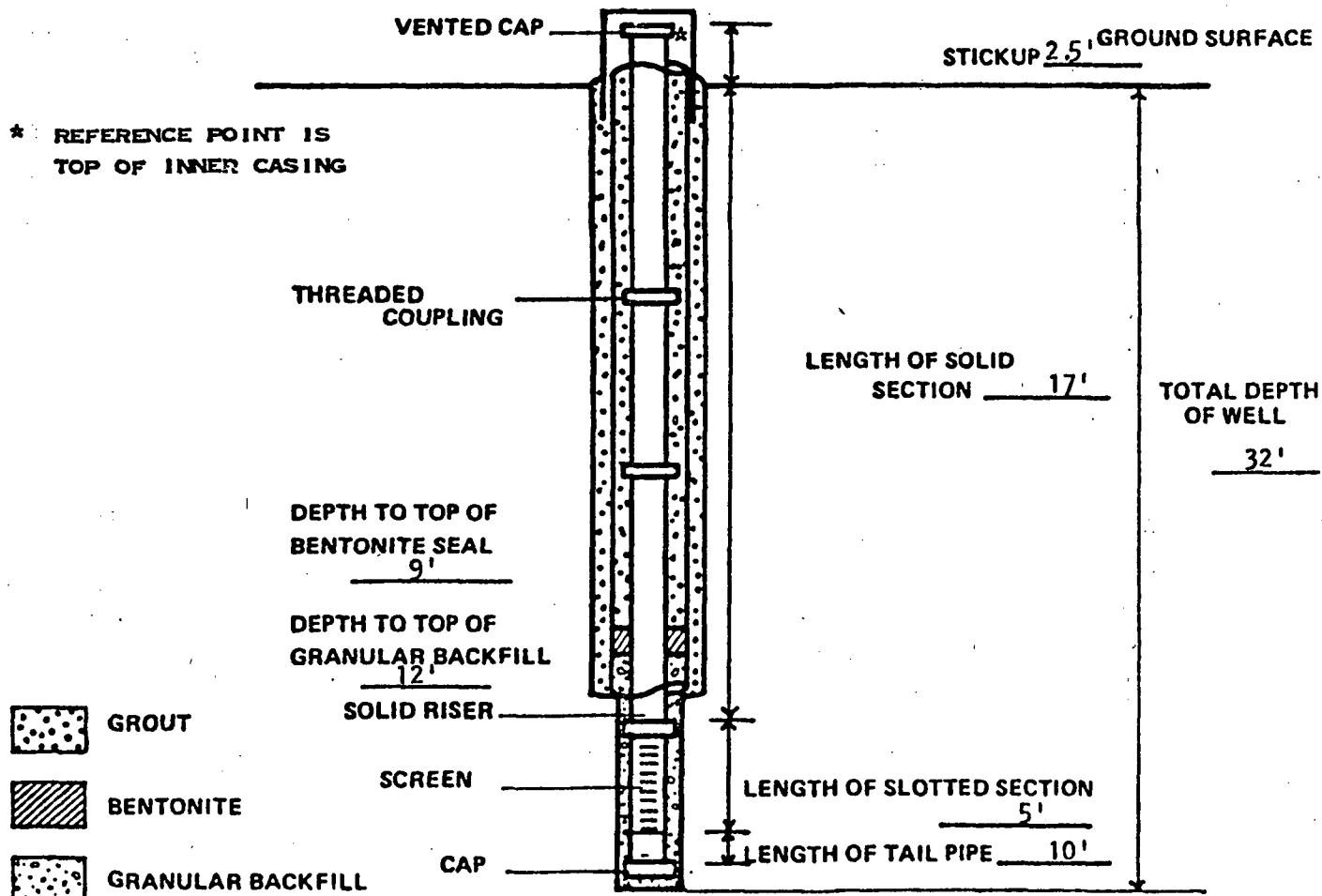


LAW ENGINEERING TESTING COMPANY
HOUSTON TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

JOB NAME Lubrizol JOB NUMBER HT-1286
WELL NUMBER EQ-3 INSTALLATION DATE 10-03-84
LOCATION F+70.17, 23+56.07
GROUND SURFACE ELEVATION 34.28 REFERENCE POINT ELEVATION 36.78
GRANULAR BACKFILL Clemtex #2 SLOT SIZE .015"
SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. R.H. Long
DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
STABILIZED WATER LEVEL 6'10" FEET BELOW GROUND SURFACE, MEASURED ON 10-18-84

(NOT TO SCALE)

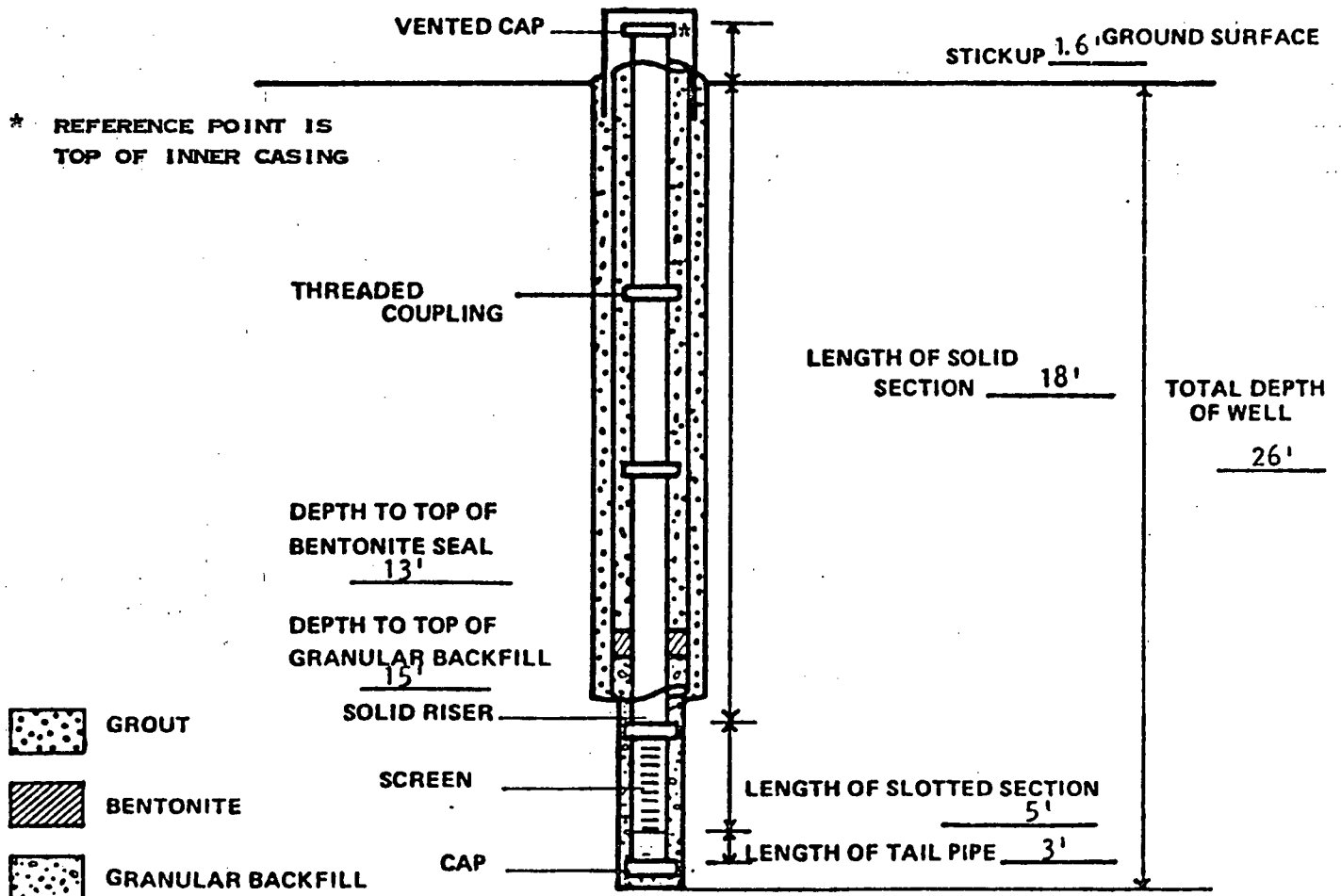


LAW ENGINEERING TESTING
COMPANY
HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER EQ-2 INSTALLATION DATE 10-08-84
 LOCATION G+07.42, 24+46.17
 GROUND SURFACE ELEVATION 34.37 REFERENCE POINT ELEVATION 36.0
 GRANULAR BACKFILL Clemtex #2 SLOT SIZE .015"
 SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
 RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
 BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. S.J. Lauristen
 DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
 LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
 STABILIZED WATER LEVEL 6'7" FEET BELOW GROUND SURFACE, MEASURED ON 10-18-84

(NOT TO SCALE)

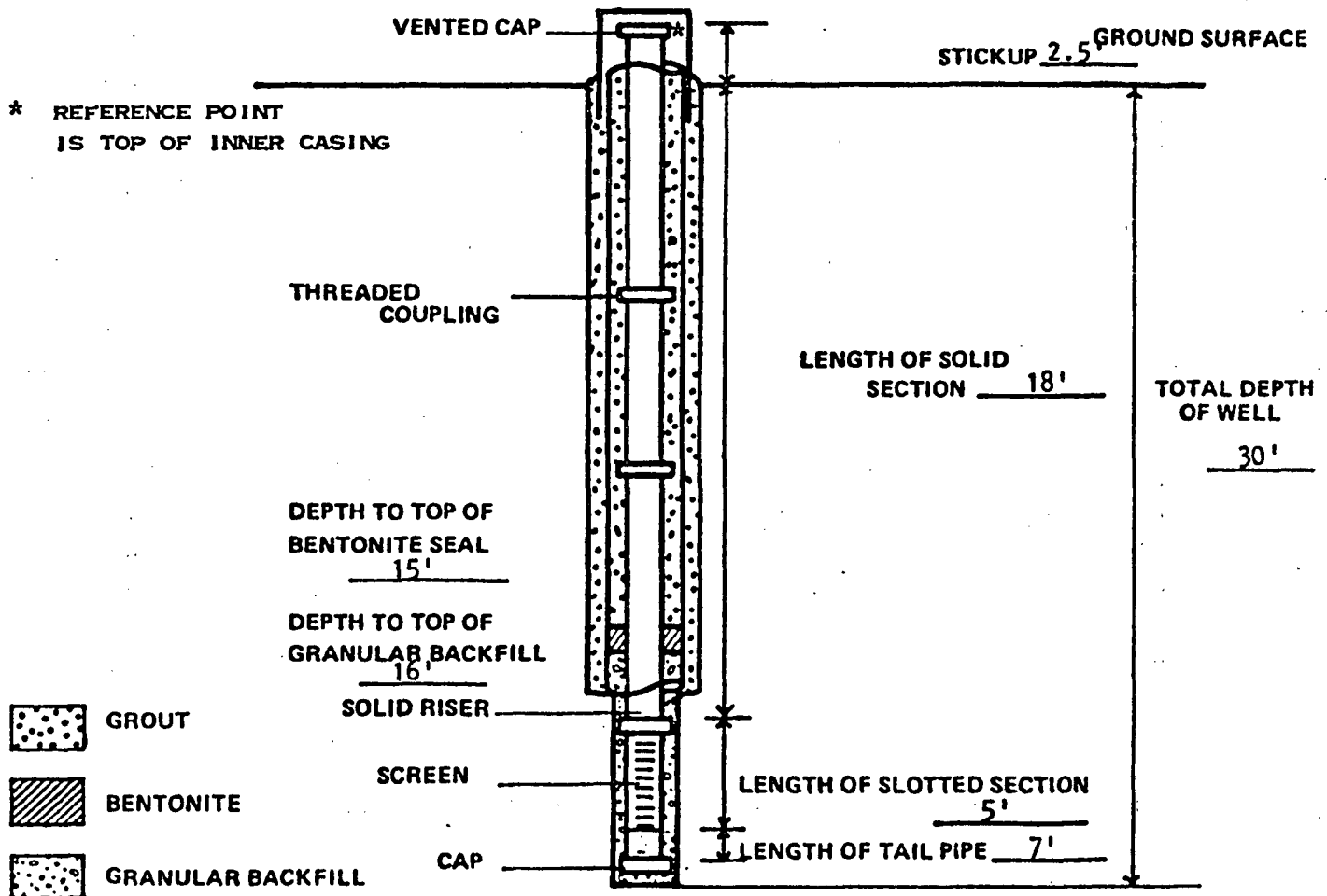


LAW ENGINEERING TESTING
 COMPANY
 HOUSTON, TEXAS

TYPE III MONITORING WELL INSTALLATION RECORD - Part B

JOB NAME Lubrizol JOB NUMBER HT-1286
 WELL NUMBER EQ-1 INSTALLATION DATE 10-09-84
 LOCATION G+02.5, 25+0.5
 GROUND SURFACE ELEVATION 34.39 REFERENCE POINT ELEVATION 36.89
 GRANULAR BACKFILL Clemtex #2 SLOT SIZE .015"
 SCREEN MATERIAL SCHD. 40 PVC SCREEN DIAMETER 3"
 RISER MATERIAL SCHD. 40 PVC RISER DIAMETER 3"
 BOREHOLE DIAMETER 6" LAW ENGINEERING FIELD REP. R. H. Long
 DRILLING TECHNIQUE Rotary Wash DRILLING CONTRACTOR LETCo
 LOCK: BRAND _____ SIZE/MODEL _____ KEYCODE/COMBINATION _____
 STABILIZED WATER LEVEL 6'7" FEET BELOW GROUND SURFACE, MEASURED ON 10-18-84

(NOT TO SCALE)



LAW ENGINEERING TESTING
 COMPANY
 HOUSTON, TEXAS

TEST BORING RECORD

CONESION - 100 psf

PENETRATION - BLOWS PER F

[illegible]

REMARKS:

Type III Well Installed
6" Casing Set From Ground
Surface to 26.0' Screen Set
at 50.0' - 55.0'.

DRILLED BY SJL

LOGGED BY EAS

CHECKED BY DRP

BORING NUMBER EO-4

DATE STARTED 2/19

DATE COMPLETED 2/21/

JOB NUMBER HT-12

TEST BORING RECORD

ELEV.	DEPTH FEET	DESCRIPTION	s	dd	pt	mc	0	COHESION - 100 PSI PENETRATION - BLOWS PER FOOT							
								5	10	15	20	30	40	60	80
34.39	0.0														
		Black Silty CLAY (CL)	X												
26.39	8.0	(FILL) Brown and Gray Mottled Silty CLAY (CL), Plastic, Friable	X												
21.89	12.5	Becomes Moist	X												
16.39	18.0	Reddish Brown, Wet Sandy CLAY (SC)	X												
11.39	23.0	Becoming Very Wet, Runny	X												
10.39	24.0		X												
		Greenish Gray Silty CLAY, (CL), Plastic, Friable													
6.39	28.0	Becomes Gray and Brown	X												
1.39	33.0	Becomes Reddish Brown, with Slickensides, Calcareous Nodules	X												
-3.61	38.0	Becomes Brownish Red, Sandy Along Friable Surfaces	X												

REMARKS:

DRILLED BY SJL
 LOGGED BY EAS
 CHECKED BY DRP

BORING NUMBER EQ-4
 DATE STARTED 2/19/85
 DATE COMPLETED 2/21/85
 JOB NUMBER HT-1286

INDUSTRIAL SOLID WASTE

*Closure and Post-Closure Compliance Review Checklist (TAC Section 335.211-.220)

**

Note: List each type of hazardous waste T, S, D facility, number and volume in the comments sheet.

I. CLOSURE PLAN; Is there a written plan?

Yes ☒ No ☐

1. Does the plan identify the *MAXIMUM EXTENT OF OPERATION which will be unclosed during the life of the facility?

Yes ☒ No ☐

*Note: The rules [335.213(a)(1)] require that the closure plans identify the maximum extent of the operation which will be unclosed during the life of the facility. If the plan is based on the expected extent of operations to be closed just prior to closure, it is important to consider whether that represents the "maximum" in this question.

2. Does the plan identify the steps for PARTIAL and/or COMPLETE CLOSURE [335.213(a)], at any time during the intended operating life, of

a. surface impoundments?

N/A ☒ Yes ☐ No ☐

b. landfills?

N/A ☒ Yes ☐ No ☐

c. tanks?

N/A ☐ Yes ☒ No ☐

d. other (specify: _____)

N/A ☒ Yes ☐ No ☐

3. Is there an estimate of the MAXIMUM INVENTORY of wastes in storage or treatment at any time during the life of the facility?

N/A ☐ Yes ☒ No ☐

4. Does the plan clearly identify the STEPS TO CLOSE [335.213(a)]?

a. at any point during the intended operating life?

Yes ☒ No ☐

b. at the end of the intended operating life?

Yes ☒ No ☐

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*(Changed 10/13/83; added question to I above; this checklist is for use with "Part A" permit applicants that have not submitted "Part B" application)

**This response column indicates noncompliance.

5. Are the following STEPS TO CLOSE included in the plan:
- a. removal of wastes [335.214(a)]? N/A ☐ Yes ☒ No ☐
 - b. treatment of wastes [335.214(a)]? N/A ☐ Yes ☒ No ☐
 - c. waste disposal [335.214(a)]? N/A ☐ Yes ☒ No ☐
 - d. cover [335.344(a)]? N/A ☒ Yes ☐ No ☐
 - e. decontamination of equipment and structures [335.213(a)(3)]? N/A ☐ Yes ☒ No ☐
 - f. closure certification [335.216]? N/A ☐ Yes ☒ No ☐
6. Does the plan describe the DECONTAMINATION [335.213(a)(3)] of facility equipment and structures? N/A ☐ Yes ☒ No ☐
7. With respect to CERTIFICATION of closure (335.216), does the closure plan describe scheduled or estimated number of inspections? Yes ☒ No ☐
8. Does the plan identify the YEAR when closure is expected to occur [335.213(a)(4)]? Year 2019 Yes ☒ No ☐
9. Is there a SCHEDULE for final closure activities [335.213(a)(4)]? Yes ☒ No ☐
10. Closure plan evaluated 9/10/85 : Adequate (date) Yes ☒ No ☐

COMMENTS

Closure Plan for Tanks

B-32 - 15,100 gallons

CA-1 - 18,000 gallons

J-42 - 10,000 gallons

WO-6 8,400 gallons

This image shows a single page of white paper with horizontal black ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

TDWR-

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 *(Changed 10/13/83, added checklist for use with "Part A" permit applicants that have not submitted "Part B" application)

****This response column indicates noncompliance.**

II. POST-CLOSURE PLAN CHECKLIST; Is there a written plan?

*N/A ☒ Yes ☐ No ☐

*Note: If no post-closure required, proceed to Cost Estimate Checklist.

1. Does the post-closure plan provide for 30 years of post-closure care? N/A ☐ Yes ☐ No ☐
 - How many years of post-closure care? _____
2. Does the plan clearly identify the ACTIVITIES required in the post-closure care? Yes ☐ No ☐
3. Do the MAINTENANCE PLANS for waste containment structures [335.218(a)(2)] include:
 - a. maintaining final cover (erosion damage repair) frequencies [335.344(d)(1)]? Yes ☐ No ☐
 - b. vegetation and fertilizing frequencies [335.218(a)(2)(A)]? Yes ☐ No ☐
 - c. collecting, removing, and treating leachate activities [335.344(d)(2)]? N/A ☐ Yes ☐ No ☐
 - d. collecting, removing, and treating leachate frequencies [335.344(d)(2)]? N/A ☐ Yes ☐ No ☐
 - e. gas collection activities [335.344(d)(3)]? N/A ☐ Yes ☐ No ☐
 - f. gas collection frequencies [335.344(d)(3)]? N/A ☐ Yes ☐ No ☐
4. Do MONITORING EQUIPMENT MAINTENANCE plans [335.218(a)(2)(B)] include:
 - a. activities? Yes ☐ No ☐
 - b. frequencies? Yes ☐ No ☐
5. Does the plan identify the name, address and phone number of the POST-CLOSURE PERIOD CONTACT [335.218(a)(3)]? Yes ☐ No ☐

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*(Changed 10/13/82; added checklist for use with "Part A" permit applicants that have not submitted "Part B" application)

***This response column indicates noncompliance.

6. For landfills, does the post-closure plan address the following objectives and indicate how they will be achieved [335.344(b)]?
 - a. Control of pollution migration via ground water, surface water, and air. N/A ☐ Yes ☐ No ☐
 - b. Control of surface water infiltration, including prevention of pooling. N/A ☐ Yes ☐ No ☐
 - c. Prevention of erosion. N/A ☐ Yes ☐ No ☐
7. For land treatment operations, does the post-closure plan address the following objectives and indicate how they will be achieved [335.327(a)]?
 - a. Control of migration of hazardous wastes and constituents into the ground water. N/A ☐ Yes ☐ No ☐
 - b. Control of the release of contaminated runoff into surface water. N/A ☐ Yes ☐ No ☐
 - c. Control of the release of airborne particulate contaminants caused by wind erosion. N/A ☐ Yes ☐ No ☐
 - d. Protection of food chain crops. N/A ☐ Yes ☐ No ☐
8. For landfills and land treatment operations, does the post-closure plan include at least a narrative statement indicating that the following factors were considered in addressing the closure objectives [335.327(b), 335.344(b)]?
 - a. Type and amount of waste. N/A ☐ Yes ☐ No ☐
 - b. Mobility and rate of migration. N/A ☐ Yes ☐ No ☐
 - c. Site location, topography, and surrounding land use. N/A ☐ Yes ☐ No ☐
 - d. Climate, including precipitation. N/A ☐ Yes ☐ No ☐
 - e. Characteristics of the cover, including material, final surface contour, thickness, porosity, permeability, slope, vegetation. N/A ☐ Yes ☐ No ☐

TDWR-

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*(Changed 9/30/82, added checklist for use with "Part A" permit applicants that have not submitted "Part B" application)

★★This response column indicates noncompliance.

- COMMENTS**

[illegible]

III. COST ESTIMATE; Evaluated: 7/10/85
date

N/A Yes ✓ No

1. Is there a written closure cost estimate [335.232(a)]
(Supp. 14 of Group I for estimated cost? Yes ✓ No

2. Is the closure cost estimate adequate to cover all
required closure activities [335.232(a)]? Yes ✓ No

If "No", specify in comments.

3. Is there a written post-closure cost
estimate [335.233(a)]? N/A ✓ Yes No

4. Is the annual estimate multiplied by 30 to
cover the entire post-closure care period
[335.233(b)]? Yes No

or number of years

5. Is the cost estimate adequate to cover all the activities
in the post-closure plan [335.218(a)]? Yes No

Including labor costs? Yes No

As well as the requirements of notice
to local land authorities and in deeds
(335.219 and .220)? Yes No

COMMENTS

TDWR-

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*(Changed 10/13/83, added checklist for use with "Part A" permit applicants that
have not submitted "Part B" application)

***This response column indicates noncompliance.

FACILITY STATUS SHEET
GROUND WATER MONITORING PAGE

.....	Evaluated?	Adequate?
2. Ground Water Monitoring Well System:	2A. <input type="checkbox"/> NA <input checked="" type="checkbox"/> NE <u> </u> / <u> </u> / <u> </u> M D Y	2B. <input type="checkbox"/> Yes <input type="checkbox"/> No
3. Ground Water Sampling, Analysis and Evaluation Program:	3A. <input type="checkbox"/> NA <input checked="" type="checkbox"/> NE <u> </u> / <u> </u> / <u> </u> M D Y	3B. <input type="checkbox"/> Yes <input type="checkbox"/> No
4. Notice of Significant Increase in Parameter Concentrations:		4A. <input type="checkbox"/> NA <input checked="" type="checkbox"/> NO <u> </u> / <u> </u> / <u> </u> M D Y
5. Ground Water Quality Assessment Report:		5A. <input type="checkbox"/> NA <input checked="" type="checkbox"/> NO <u> </u> / <u> </u> / <u> </u> M D Y
	5B. <input type="checkbox"/> NA <input checked="" type="checkbox"/> NE <u> </u> / <u> </u> / <u> </u> M D Y	5C. <input type="checkbox"/> Yes <input type="checkbox"/> No	5D. Showed hazardous constituents in ground water ? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No
6. Waiver Demonstration:	6A. <input checked="" type="checkbox"/> NA <input type="checkbox"/> NE <u> </u> / <u> </u> / <u> </u> M D Y	6B. <input type="checkbox"/> Yes <input type="checkbox"/> No
7. Ground Water Monitoring Records:	7A. <input type="checkbox"/> NA <input checked="" type="checkbox"/> NE <u> </u> / <u> </u> / <u> </u> M D Y	7B. <input type="checkbox"/> Yes <input type="checkbox"/> No

COMMENTS: Sample results from EQ-2 well sampling on 10/18/84 - SW 03897
showed hazardous constituents. EQ-3 sample results taken
by Lubrizol tested by NUS (4/24/85) also showed hazardous
constituents.

TEXAS WATER COMMISSION

Paul Hopkins, Chairman
Ralph Roming, Commissioner
John O. Houchins, Commissioner



Larry R. Soward, Executive Director
Mary Ann Hefner, Chief Clerk
James K. Rourke, Jr., General Counsel

October 7, 1985

Mr. Robert Copes
Lubrizol Corp.
P. O. Box 158
Deer Park, Texas 77536

Dear Mr. Copes:

RE: Lubrizol Corp., ISW Registration No. 30324.

On September 10, 1985, Mac Vilas, of this office, accompanied by Rose Ann Simpson, Frank Hejtmanek, and yourself conducted an industrial solid waste compliance inspection of your facility. The following deficiencies were noted:

1. Texas Administrative Code (TAC) Section 335.6 (c) - Notification Requirements

- a. Waste oils generated from maintenance operations are not listed as a waste on the Notice of Registration (NOR).
- b. The associated on-site waste management facilities for waste numbers 001, 002, and 006 is not current.
- c. Disposition of waste number 008 should be ON-SITE/OFF-SITE, and the tanks holding this waste need to be listed as facilities.
A request to amend the registration should be mailed to:

Texas Water Commission
Attention: Mr. Dick Martin
P. O. Box 13078
Austin, Texas 78711

2. TAC - Section 335.116 - General Inspection Requirements

The time of inspection was not noted on your inspection logs.

3. TAC Section 335.117 - Personnel Training

Records of training given to facility personnel was not noted for the years prior to 1984.

4. TAC Section 335.264 - Inspections

- a. A secondary containment system was not noted for the tank car shell.
- b. The tank farm area containing tank T-23X had inadequate secondary containment.

Mr. Robert Copes

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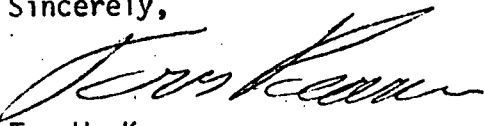
October 7, 1985

5. TAC Section 335.4 - General Prohibitions

The dike for the equalization basin was noted as eroded in places.

Please respond to this office in writing by November 8, 1985 with your plans and implementation schedule which will ensure corrective actions of the above-listed deficiencies by November 22, 1985. If you have any questions, please contact Mac Vilas at (713) 479-5981.

Sincerely,



Tom W. Kearns

Manager

Hazardous and Solid Waste

Southeast Region

TWK/MV/ah